STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Verizon North Inc. (f/k/a GTE North Incorporated) and Verizon South Inc. (f/k/a GTE South Incorporated)	)	
	)	Docket No. 00-0812
Petition seeking approval of cost studies for Unbundled Network Elements, avoided costs and intrastate switched access services.	)	

DRAFT INTERIM ORDER

By the Commission:

I.
Introduction And Procedural Background

On December 21, 2000, Verizon filed a Petition with the Illinois Commerce Commission (the "Commission") initiating the instant proceeding in compliance with the directives of prior Commission Orders. These directives arise from two prior cases:

- In Docket No. 98-0866, the Commission entered an Order approving the merger of GTE and Bell Atlantic ("Merger Order"). Merger Condition 22 required Verizon to file an updated Unbundled Network Elements ("UNE") cost study within six months of merger closure, which was no later than December 30, 2000. (Application for the Approval of a Corporate Reorganization involving a Merger of GTE Corporation and Bell Atlantic Corporation, Docket No. 98-0866 at 45). Additionally, Condition No. 20 of the *Merger Order* provides: "GTE shall continue to work with the Commission to reach final, Commission approved, wholesale service rates." (*Merger Order* at 45). Also, Condition No. 21 of the *Merger Order* provides that "GTE shall continue to work with the Commission to reach final, Commission approved, unbundled network element, interconnection, transport and termination rates." (*Id*.)

- In Docket Nos. 97-0601, 97-0602, and 97-0516 (consol.), the Commission entered an Order on Reopening requiring, among other things, that Verizon file updated Long Run Service Incremental Cost Studies ("LRSICs") for intrastate switched access rates within 30 days of the Order. Subsequent to the entry of the Order on Reopening, the Commission granted Verizon's request to defer filing the intrastate switched access LRSIC studies until such time as its updated UNE cost

studies were filed. (Order, Docket Nos. 97-0601/97-0602/97-0516 (consol.), entered June 21, 2000 ("June 21 Order")).

Accordingly, pursuant to the *Merger Order* and the *June 21 Order*, Verizon made its compliance filings seeking approval of the following:

1. Verizon's Integrated Cost Model ("ICM");
2. the recurring and nonrecurring cost studies supporting its proposed UNE rates;
3. its avoided cost study;
4. its intrastate switched access recurring and nonrecurring cost study; and
5. its efforts to satisfy its compliance with conditions 20, 21 and 22 of the *Merger Order*.

Verizon's filing is composed of four cost studies—one study each for UNEs, resale avoided costs, nonrecurring costs, and intrastate switched access. At a status hearing on March 8, 2001, the Administrative Law Judge ("ALJ") tri-furcated this Docket in three Phases stating:

> Phase one will review a cost model submitted by Verizon in conjunction with its original filing and the application of that cost model to access charges.
>
> Phase two will review the unbundled network element cost information provided by Verizon. My understanding is also at that time it will be argued–the parties will be arguing the necessity of tariffing those unbundled network element costs, and in the event that tariffs are not necessary the costs will, nonetheless, be established and imported for use into Verizon's interconnection agreements.
>
> The final phase will review and decide Verizon's avoidable costs, and will then set wholesale rates.

(Tr. at 5).

In accordance with the ALJ's ruling, Phase I of this proceeding will not set rates for either UNEs or switched access. This point is not disputed. Indeed, as this phase of the proceeding is focused on ICM itself, expense inputs to ICM will be decided in Phase II of this

proceeding. As set forth below, a rejection of a particular ICM input does not warrant a rejection of the model itself.

Petitions to Intervene were filed, and granted by the ALJ to the following parties: AT&T Communications of Illinois ("AT&T") and Illinois Rural Competitive Alliance ("IRCA"). Illinois Commerce Commission Staff ("Staff") appeared by its counsel and presented evidence in support of its position.

The evidentiary portion of Phase I has been completed. This Interim Order addresses the issues relating to Verizon's ICM and its application to the LRSIC study. With respect to Phase I issues: Verizon presented the written testimonies of David G. Tucek, Terry R. Dye and Larry Richter; Staff presented the written testimonies of James Zolnierek, Robert F. Koch, Mark A. Hanson, Judith R. Marshall, and Karen Buckley; IRCA presented the written testimony of Jason P. Hendricks; and AT&T presented the written testimonies of Michael J. Boyles and Cate Hegstrom.

Pursuant to notice as required by law and the rules and regulations of the Commission, this matter came for evidentiary hearing before a duly authorized ALJ at the Commission's Springfield office on August 1, 2002.

II.
Scope Of Phase I

Pursuant to the ALJ's March 8, 2001 ruling, Phase I of this proceeding is limited to a review of ICM and the application of that cost model to access charges. Rates are not at issue in this proceeding. This issue is not in dispute.

In deciding Phase I issues, the Commission must distinguish between modeling issues and ICM input issues. Modeling issues relate to the propriety of ICM itself—a Phase I issue. In producing costs, ICM incorporates numerous model inputs. The propriety of ICM's expense

inputs as they relate to UNEs and switching are Phase II issues. Although parties inevitably discussed inputs to ICM in Phase I in order to properly evaluate the model and in many instances in this Interim Order of the Commission deems the input reasonable, the rejection of a particular input does not warrant a Commission rejection of ICM as a whole.

III.
Description of Model

Verizon witness David G. Tucek sponsored and described Verizon's ICM, Version 4.4. Verizon asserts that ICM is a long-run, forward-looking incremental cost model that estimates the economic recurring costs of provisioning both retail services and UNEs from Verizon's Illinois network.

Verizon explains that the purpose of ICM is to calculate the Total Element Long Run Incremental Cost ("TELRIC") of individual UNEs and the Total Service Long Run Incremental Cost ("TSLRIC") of retail services. Verizon further explains that ICM does this by designing the network all at once, using currently available, forward-looking technology and the prices for labor, material and equipment that Verizon is actually able to obtain in Illinois. Verizon states that in keeping with the Federal Communications Commission's ("FCC") *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, First Report and Order,[1] the modeled network is based on Verizon's existing wire center locations in Illinois. Verizon further states that ICM models the network so that it is capable of serving 100% of current demand, and its components include all the network elements Verizon is required to unbundle

[1] *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, First Report and Order, FCC No. 96-325, CC Docket Nos. 96-98 and 95-185, 11 F.C.C.R. 15499 (Aug. 8, 1996).

(*e.g.*, loops, switches, transport). Attachment DGT-1 to the Direct Testimony of Verizon witness Tucek provides a diagram illustrating the main components of the modeled network.

Verizon states that ICM is comprised of six modules: Loop, Switch, Interoffice Transport, Signaling System 7 ("SS7"), Expense, and Mapping/Reporting. Verizon further states that because these six modules design and cost the forward-looking network as if it is built all at once, the resulting costs reflects economies of scope and scale that cannot be realized in Verizon's actual network. Verizon further asserts that Verizon utilizes ICM for both retail services, such as residence and business services, and for wholesale services such as UNEs and switched and special access. Additionally, Verizon states that all of the modules are consistent, and utilize the same set of inputs. Verizon explains that if, for example, inputs related to cable prices are changed, then all six modules of ICM will be updated when the model is run.

Verizon further explains that the Loop, Switch, Interoffice Transport and SS7 modules identify the forward-looking investments associated with the various network elements, and the Expense Module calculates the factors needed to convert these investments into monthly recurring costs. Verizon asserts that these monthly recurring costs fall into two broad categories, capital costs and operating expenses. Verizon states that the capital costs include: (1) both a return of and a return on the investment; (2) property taxes associated with the investment; and, (3) income taxes associated with the return component of capital costs. Verizon asserts that the operating expenses consist of the costs of maintaining and operating the network, including the costs of general support assets such as motor vehicles and general-purpose computers. Verizon states that also included are the expenses of any marketing, billing and collection activities associated with a given UNE or service.

Verizon asserts that the Mapping/Report Module calculates the capital costs and operating expenses, using the factors produced by the Expense Module and the investments identified by the other four modules. According to Verizon, the Mapping/Report Module also maps the costs of the network components into UNEs and services, and produces reports showing the recurring costs of each.

IV.
Flexibility and Operation of the Model

A. Verizon

Verizon witness Tucek testified that ICM is flexible because:

> …it produces both TSLRIC and TELRIC estimates, meaning it can be used for the purposes of establishing UNE costs and to assist in retail rate rebalancing. In addition, the Mapping/Report Module of ICM allows the user to define new elements or services by assembling the desired type and number of basic network functions. Thus, ICM can respond to new requirements for element or service costs.

(Tucek Dir., Verizon Ex. 1.0, p. 10).

Verizon asserts that nearly all of the assumptions incorporated into ICM—such as the average spacing between poles—that drive decision rules within the model are user changeable, as are all of the inputs related to material and placement costs. Verizon states that the inputs that cannot be changed via the run time options screens are contained in tables that are easily changed. These tables can be altered from within ICM or, if the changes are numerous or complex, the table can be exported to an external application such as Microsoft Excel, modified, and imported back into ICM.

Additionally, Verizon states that there are twelve criticisms that parties have raised in this proceeding with respect to ICM. Verizon asserts that ICM can be modified to address each one

of these criticisms. Verizon states that while it does not agree with all of these criticisms, the fact that ICM can be modified to accommodate them demonstrates that ICM is flexible.

Verizon asserts that Staff's criticism that ICM is susceptible to misuse is incorrect. Staff witness Ms. Buckley asserts that ICM is susceptible to misuse because it is possible to modify inputs. Verizon responds that this contradicts her previously stated desire for easily-modified inputs, because it is the ease with which ICM's inputs can be modified that creates her perceived problem. Verizon asserts that Ms. Buckley's criticism is a non-issue, since Verizon's compliance filing in the instant docket will demonstrate that only the ordered changes have been made.

With respect to Mr. Zolnierik's claims that ICM's flexibility be judged on the ability to any changes ordered by the Commission via input changes, Verizon responds that Staff has essentially proposed an impossible standard. As Verizon witness Tucek testified:

> Such a standard is not reasonable, since every model consists of more than just inputs. Mr. Zolnierek has acknowledged this himself, since he states that the tiered structure he identifies for affecting changes "is a natural byproduct of any cost model."

(*citing* Zolnierek Reb., Staff Ex 2.1, pp. 12-13; Tucek Sur., Verizon Ex. 3.0, p. 37).

With respect to AT&T's claim regarding the number of records involved (18,615) in effectuating an update of ICM's switching inputs to reflect changes in the output from Switching Cost Information System ("SCIS") and CostMod, Verizon states that both CostMod and SCIS-IN generate files that are accepted by ICM. Verizon further states that the records generated by these two programs represent 83.1% of the total records in the file. An additional 9.4% of the records are not affected by changes in the SCIS or CostMod runs. Verizon asserts that AT&T's Initial Brief refers to only the remaining 7.5%, or 1,397 records generated by SCIS-IN. The only

time these 1,397 records would need to be changed is if the postulated change was relevant to all DMS-10's, DMS-100's, 5ESS's, and their remotes.

Moreover, Verizon states that AT&T is wrong when it states that entries would have to be entered manually. Verizon asserts that the SCIS-MO (the SCIS module that produces the remaining 7.5% of the records) generates a text or PRN file containing the values used by ICM. Verizon states that an interface to load these values into ICM is easily developed and can be accomplished, for example, with a commercially available database program or with common programming languages such as C or Pascal. Verizon notes that Mr. Tucek testified that a review of Mr. Boyles' work papers relating to his adjustment for getting started costs reveals that he is capable of extracting information from such a file. As such, Verizon states that AT&T is complaining about the prospective difficulty of entering these values manually, Mr. Boyles clearly was able to develop an interface to do so, should the need actually arise.

On the issue of PDF files, Verizon asserts that Verizon provided the supporting documentation in PDF format in order to insure that all parties were viewing the same information in terms of content and location, and as a more efficient substitute for hard copy documentation filling ten large binders. Verizon notes that this has been a practice that has worked well in other states because it allows parties to narrow the focus of their requests to those Excel spreadsheets relevant to specific items. Verizon states that Excel spreadsheets were provided when requested. Verizon provided AT&T every underlying Excel spreadsheet that was requested by name.

With regard to the adjustabilty of inputs, Verizon asserts that ICM is easily modified to allow for the placement of a 2-pair drop. As explained by Mr. Tucek, "(a)ll one has to do is replace the material inputs for, say, the 5-pair drop with the values for the 2-pair drop and then

select the 5-pair option." (Tucek Reb., Verizon Ex. 2.0, p. 68). Verizon states that such a change is not difficult and AT&T's characterization of this process as a "jury-rig" is meaningless. Verizon notes that AT&T is not disputing the accuracy of the results. Indeed, AT&T's argument actually shows that ICM is very flexible.

Finally, on the issue of source code modification, Verizon cites the testimony of Mr. Tucek:

> Mr. Boyles is embracing a standard that is different than that espoused by AT&T in other proceedings. For example, some versions of AT&T's so-called Hatfield or HAI model placed surrogate geocoded customer locations uniformly along the boundaries of census blocks and also combined all geocoded locations into groups using what the model developers termed a "rasterization" process. Users of these models cannot change these characteristics via simple input changes. Mr. Boyles' criticism rings hollow because it is true of every model, including models that AT&T has vigorously argued to be the best.

(Tucek Reb., Verizon Ex. 2.0, p. 69).

Similarly, Verizon responds that Staff witness Zolnierek's proposed standard for gauging the flexibility and openness of ICM is flawed. Verizon asserts that while he correctly identifies the three basic ways that a user can alter ICM, he implies that the third method—modification of ICM's code—is not satisfactory and that any change ordered by the Commission must be accomplished by changing model inputs. Verizon asserts that similar to Mr. Boyles, Mr. Zolnierek has essentially proposed an impossible standard. As Verizon witness Tucek testified, "…every model consists of more than just inputs." (*citing* Zolnierek Reb., Staff Ex 2.1, pp. 12-13; Tucek Sur., Verizon Ex. 3.0, p. 37).

Verizon also notes that the Florida Public Service Commission has ruled that BellSouth is not required to provide other parties access to the source code underlying their model, and that the fact that BellSouth provided its source code only in PDF form did not hinder AT&T's and

MCI WorldCom's analysis of the model. Order, Florida Docket No. 990649-TP; May 25, 2001; p. 152. Verizon has exceeded this standard because ICM's source code has been provided in both text file and PDF form.

B. Staff

Staff witness Buckley agrees that ICM is very flexible, easy to use, efficient and that nearly all of the assumptions that drive decision rules within the model are user changeable. In her Rebuttal testimony, she stated as follows:

> **Q. Do you agree with Mr. Tucek that the ICM is very flexible and that nearly all of the assumptions that drive decision rules within the model are user changeable?**
>
> A. Yes. The key to the flexibility is user familiarity with the model and its uses. With the additional information provided by Verizon representatives and hours spent using the model, I have found that ICM is flexible, and users can make changes without difficulty. I agree with Mr. Tucek that nearly all of the assumptions that drive decision rules within the model are user changeable.
>
> **Q. What was the scope of your evaluation of ICM?**
>
> A. My evaluation of the ICM model (Version 4.4) included ensuring inputs in modules are traceable to source documents, that computations are correct through integrated modules, that sensitivity analysis can be conducted with ease, and that ICM is flexible in input and output modifications with reasonable effort. This evaluation does not include the determination of the appropriateness of the input, the network design, or any pricing compliance issues. Other staff members performed those tests and provided testimonies in separate Exhibits.
>
> **Q. What is the strength of the model?**
>
> A. The result of my evaluation indicated that the ICM model integrates six complicated modules and calculates costs, as programmed, in a consistent manner. It pulls data from many other sources of Company records, compiles them, and produces cost studies in an efficient way.

(Buckley Reb., Staff Ex. 5.1, p. 8).

Ms. Buckley's only criticism of ICM relates to ICM being susceptible to misuse because it is possible to modify inputs, for example, to reflect the impact of using a 2-pair drop.

In his testimony, Staff witness Zolnierek's identifies the three basic ways that a user can alter ICM. Mr. Zolnierek is of the opinion that the third method—modification of ICM's code—is not satisfactory and that any change ordered by the Commission must be accomplished by changing model inputs.

C. AT&T

In his Direct Testimony, Mr. Boyles took the position that ICM is not flexible. In his Rebuttal Testimony, Mr. Boyles narrowed the scope of his claim to the single issue of updating ICM's switching inputs to reflect changes in the output from SCIS-MO. His only remaining point is that the number of records involved (1,397) is greater than the 510 values needed to affect an across-the-board change to ICM's material inputs table.

AT&T also complains that Verizon converts the underlying electronic spreadsheets to PDF format on the CD provided to the user. According to AT&T, "…this prevents the user from working with or making desired adjustments or modifications to the underlying data or the formulae contained in the spreadsheets." (AT&T Initial Brief, p. 27). AT&T acknowledges, however, that it was able to submit requests to Verizon identifying the name of each individual spreadsheet the user wishes to obtain in Excel format.

Finally, AT&T asserts that ICM only permits changes to inputs that are deemed by Verizon to warrant changing. AT&T states that for the size of the drop, ICM only gives the user the option of selecting a 3-pair or a 5-pair drop, not a 2-pair drop. AT&T acknowledges that ICM can be modified to account for such a change, but characterizes this modification as a "jury-rig."

Additionally, AT&T states that there are also elements of ICM that cannot be changed by employing different input values. AT&T states that the loop component of the model uses a K-mean clustering algorithm that cannot be changed without significant source code modification to the model.

D. Reply

[to be completed by Administrative Law Judge]

E. Commission Conclusion

The evidence in the record indicates that ICM, indeed, is flexible. Cost studies are inherently complex. To Verizon's credit, nearly all of the assumptions incorporated into ICM that drive decision rules within the model are user changeable, as are all of the inputs related to material and placement costs. The record indicates that inputs that cannot be changed via the run time options screens are contained in tables that are easily changed. AT&T's contention that this process is difficult lacks record support. The Commission agrees with Verizon that these tables can be altered from within ICM or, if the changes are numerous or complex, the table can be exported to an external application such as Microsoft Excel, modified, and imported back into ICM.

Additionally, ICM can be changed to incorporate changes relating to any of the twelve criticisms that parties have raised in this proceeding with respect to ICM. No party took issue with the reliability of any of these changes. As such, the record indicates that ICM is flexible enough to incorporate any necessary changes that may arise from this proceeding.

V.
ICM Modeled Network

A. Number of Digital Loop Carriers in Modeled Network

1. Verizon

Verizon asserts that ICM models a network that is consistent with the Commission's Part 791 rules and the FCC's TELRIC requirements. According to Verizon, these Commission and FCC standards contemplate a hypothetical forward-looking model network. As such, Verizon states that the goal of ICM is not to replicate Verizon's existing network, but rather model a network that best serves as a basis for Verizon's costs on a forward-looking basis. Verizon contends that because the modeled network is hypothetical, it would be impossible for Verizon to ever employ ICM's modeled network.

Verizon further asserts that the FCC standard for forward-looking economic cost studies center on the costs that an incumbent local exchange carrier ("ILEC") expects to incur because it will encourage facilities-based competition by competitors that design more efficient network configurations. Verizon cites paragraph 685 of the FCC's First Report and Order, which states:

> Under the third approach, prices for interconnection and access to unbundled elements would be developed from a forward-looking economic cost methodology based on the most efficient technology deployed in the incumbent LEC's current wire center locations. This approach mitigates incumbent LECs' concerns that a forward-looking pricing methodology ignores existing network design, while basing prices on efficient, new technology that is compatible with the existing infrastructure. *This benchmark of forward-looking cost and existing network design most closely represents the incremental costs that incumbents actually expect to incur in making network elements available to new entrants*. Moreover, this approach encourages facilities-based competition to the extent that new entrants, by designing more efficient network configurations, are able to provide the service at a lower cost than the incumbent LEC. We, therefore, conclude that the forward-looking pricing methodology for interconnection and unbundled network elements should be based on costs that assume that wire centers will be placed at the incumbent LEC's current wire center

> locations, but that the reconstructed local network will employ the most efficient technology for reasonably foreseeable capacity requirements.

(Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, First Report and Order, 11 FCC Rcd. 15499 (1996) ("First Report and Order") (*emphasis* added).

Verizon contends that the FCC contemplates a reconstructed local network which implies economies of scope and scale that no incumbent will ever realize in the real world.

Additionally, Verizon notes that in its Universal Services Order,[2] the FCC held that:

> [t]he loop design incorporated into a forward looking economic cost study or model should not impede the provision of advanced services.

Verizon asserts that by this language, the FCC also requires that the modeled loop network not impede the provision of advanced services, even if the existing network does not meet this requirement.

Verizon states that as a result of these standards, ICM models a hypothetical network. Specifically, Verizon states that this model places Next Generation Digital Loop Carriers ("NGDLCs") based on a combined size and copper loop-length constraint utilizing existing wire center locations. Verizon further states that a cost model that reflects less efficient technology would not be consistent with either the FCC's or the Commission's requirements for forward-looking cost studies.

Verizon notes that the Commission's rules also require that costs be modeled as if the service were being offered for the first time. Section 791.20(c) of the Commission's rules states:

> Forward-looking costs are the costs to be incurred by a carrier in the provision of a service. These costs shall be calculated as if the service were being provided for the first time and shall reflect planned adjustments in the firm's plant and equipment. Forward-looking costs ignore embedded or historical costs; rather, they are

[2] FCC's First Report and Order on Universal Service, CC Docket No. 96-45, FCC 97-157 (rel. May 8, 1997 ¶ 250).

> based on the least cost technology currently available whose cost can be reasonably estimated based on available data.

83 Ill. Adm. Code § 791.206.

Verizon asserts that ICM models a network that is consistent with both the FCC and Commission standards. Verizon states that ICM has two loop length options: a 12 kilofeet ("kf"), 6 mbps copper loop option and an 18kf loop option. Verizon states that the 12kf option best meets the Commission and FCC standards. Verizon further asserts that this modeled network has the capability of providing advanced services requiring the transmission speed of the most commonly deployed form of xDSL.[3] Verizon maintains that the FCC's March 31, 1999 order in the Advanced Services Docket (CC Docket No. 98-147), adopts the term "xDSL" as the label for advanced service technologies and identifies asynchronous digital subscriber line ("ADSL") as the most commonly deployed of these technologies. (Order at Par. 10, fn. 10). According to Verizon, ADSL subscribers generally experience downstream transmission speeds from 1.54 to 6.14 Mbps.

Verizon further asserts that the 18kf copper loop length restriction that allows for speeds slower than 6 mbps. Verizon states that this option remains consistent with the Revised Resistance Design ("RRD") standard used to lay out local loops on a global, or wire-center wide, basis. Verizon further states that the RRD standard requires that all copper loops greater than 18kf be loaded. Verizon states that with this option, ICM models a network containing copper loops that, like the 12kf, 6 mbps option, does not impede some form of advanced data services—albeit at a speed slower than 6 mbps.

[3] Verizon notes that this capability to accommodate advanced services does not mean the forward looking costs include all the cost necessary to provision all advanced services. The costs to implement all types of advanced services, including all forms of xDSL are not included in this study.

Verizon maintains that while ICM's 12kf, 6 mbps copper loop option network best meets the FCC and Commission standards, ICM should not be rejected if the Commission does not agree with this option. Verizon states that at a minimum, the copper portion of the loop should be restricted to 18kf, in order to comply with the RRD standard used to lay out local loops on a wire-center wide basis. Verizon states that as such, the 18kf option models a network that will not impede the minimum transmission speed specified by the Public Utilities Act (the "Act"). Verizon, however, states that the performance capability of the advanced services declines along with the transmission speed of the copper loop. According to Verizon, the choice is not to accept or reject ICM on the basis of the option selected in the Company's filing. Verizon states that the choice is between selecting the 12kf modeled network that meets the transmission speed specified by both the FCC's definition of advanced services and the Act, or the 18kf network that only meets the minimum requirements of the definition in the Act.

Verizon asserts that ICM does not model too many Digital Loop Carriers ("DLCs") in its local loop network. Although ICM does, in fact, model more DLCs than are present in Verizon's existing network in Illinois, the assertion that the cost or number of DLCs is "excessive and imprudent" is unjustified. These parties simply ignore the copper loop length restrictions required in order to provide advanced services or to meet the RRD standard discussed above. Given these restrictions, there is no way to model fewer DLCs.

Regarding allegations that the ICM modeled network is overbuilt, Verizon states that each of these allegations is groundless.

Verizon disputes IRCA's claim that, "…many of the DLCs assumed to be placed would serve only 1, 2, or a handful of customers." (Hendricks Dir., IRCA Ex. 1.0, p. 10). This criticism is baseless. As explained by Verizon witness Tucek, under the 12kf option, only

207 DLCs, or 4.7% of the modeled DLCs, serve 5 or fewer customers. According to Verizon, under the 18kf option, only 67 DLCs, or 3.3% of the modeled DLCs, serve 5 or fewer customers.

Furthermore, Verizon notes that the lines served by these DLCs represent only 0.09% and 0.03% of the lines in Verizon's Illinois network, respectively. As such, even under the 12kf options, less than 1% of the lines in ICM's modeled network are served by DLCs with 12 or fewer lines. Verizon states that Mr. Hendricks' contention that many of ICM's DLCs "would serve only 1, 2, or a handful of customers" is devoid of merit.

Additionally, Verizon states that Mr. Hendricks' concern about the impact of modeling the deployment of small DLCs in sparse population areas is unsupported. Verizon refers to Mr. Tucek's Rebuttal Testimony:

> …if the material and placement costs of the smallest DLC are set equal to zero, the TELRIC of the 2-wire loop drops by $1.23, or only 4.6 percent. This result is for the 12kf, 6 mbps option. For the 18kf option, the decrease is $0.37, or only 1.5 percent.

(Tucek Reb., Verizon Ex. 2.0, p. 17).

Verizon asserts that Mr. Hendricks' testimony that ICM models too many DLCs is inconsistent with the record in the instant case. Verizon claims that Mr. Hendricks' criticisms of ICM are merely his unsupported opinion stated as facts.

Verizon also disagrees with Staff witness Koch's claims that there are too many DLCs in the modeled network, and that ICM models the incorrect type of DLCs.

Regarding the number of DLCs, Verizon states that Mr. Koch does not provide any evidence to support his conclusion. Verizon states that there is not one reference to a standard, nor a cite to actual facts in Mr. Koch's testimony. Verizon states that Mr. Koch's testimony only contains his unsupported opinion that Verizon's ICM models too many DLCs.

Further, Verizon states that Mr. Koch is wrong and his statements were totally rebutted in the Rebuttal and Surrebuttal testimonies of Verizon witness Tucek. First, Verizon states while Mr. Koch may believe that ICM is overbuilt, he fails to consider, for example, that the Commission's rules require that costs be modeled as if the service were being offered for the first time. 83 Ill. Adm. Code § 791.20(c). Verizon asserts that this requires that, at a minimum, the copper portion of the loop be restricted to 18kf, in order to comply with the RRD standard used to lay out local loops on a wire-center wide basis. According to Verizon, if Mr. Koch believes that ICM models too many DLCs under the 12kf copper loop restriction, this belief cannot credibly exist if the 18kf option is chosen for ICM.

Furthermore, Verizon asserts that Mr. Koch's assertion that too many DLCs are modeled does not hold up when compared to the actual facts in the record. Verizon states that ICM's modeled circuit equipment investment is almost 50% below either the reproduction cost or the book cost of this equipment. Verizon states that, as such, Mr. Koch's assertions regarding the number of modeled DLCs lacks merit.

Verizon also disputes Mr. Koch's claims that ICM should have modeled traditional loop carriers rather than NGDLCs. Verizon states that in response to a Verizon data request, Mr. Koch gave the SLC-96 as an example of the traditional loop carrier he is recommending. Verizon further states that in the same data request response, and in his testimony, Mr. Koch defined a NGDLC in terms of its capability to support a hybrid fiber/copper network and to extend the reach of advanced services to all customers in the wire center. Verizon states that Mr. Koch's emphasis on the advanced-services capability of the DLCs modeled by ICM is misplaced. Verizon asserts that ICM only models a network that does not impede the provision

of advanced services. As such, the cost of any additional equipment needed to provide advanced services is not included in ICM's modeled investment.

Verizon also asserts that Mr. Koch does not recognize that Verizon is purchasing the DLCs modeled by ICM for use in its network today. Verizon states that by comparison, the Subscriber Line Charges ("SLC")-96 that Mr. Koch puts forth as a forward-looking, "traditional" DLC does not have the GR-303 capability and is no longer manufactured. Verizon states that the SLC-96 is not a forward-looking technology.

Finally, Verizon contends that ICM's use of NGDLCs is more efficient than the "traditional" DLCs espoused by Mr. Koch. Verizon asserts that the GR-303 interface provided by ICM's NGDLCs is more efficient because it allows for greater concentration on the DS-1 links that connect the DLC to the central office.

2. Staff

Staff asserts that Verizon's modeling methodology, by modeling a network with advanced services capabilities that well exceed those currently existing in, or planned for, its network significantly inflates Verizon's cost estimates, and therefore UNE rates. The gist of Staff's argument is that this advanced service capability as modeled in its methodology, models services for a network that Verizon currently does not have, and according to Mr. Tucek, will not have in the foreseeable future. Staff states that for this reason ICM must be rejected.

Staff also states that the portion of the FCC's Universal Services Order cited by Verizon is taken out of context. While Staff acknowledges that the Order states that "[t] he loop design incorporated into a forward looking economic cost study or model should not impede the provision of advanced services." (Tucek Reb., Verizon Ex. 2.0, p. 19, *citing First Report and Order on Universal Service*, CC Docket 96-45, FCC 97-157 (rel. May 8, 1997), ¶ 250). Staff states that the preface this FCC statement states:

> Criteria for Forward-Looking Economic Cost Determinations. Whether Forward-looking economic cost is determined according to a state- conducted cost study or a Commission-determined methodology; we must prescribe certain criteria to ensure consistency in calculations of federal universal service support. Consistent with the eight criteria set out in the Joint Board recommendation, [fn] we agree that all methodologies used to calculate the forward-looking economic cost of providing universal service in rural, insular, and high cost areas must meet the following criteria:

First Report and Order on Universal Service, ¶ 250.

Staff asserts that the criteria that the FCC is describing apply to estimation of the costs of providing universal service, and not to the calculation of TELRIC costs. Staff states that the FCC has made it abundantly clear that its USF cost model should not be relied upon to set TELRIC-compliant rates for UNEs. *Kansas and Oklahoma Section 271 Order*, CC Docket No. 00-217, FCC 01-29, (rel. Jan 22, 2001) ¶ 84.

Staff states that the FCC statement quoted by Mr. Tucek in his testimony indicates that in providing Universal Service subsidies, the FCC will make available funds sufficient to support a network that does not impede—as opposed to fully supporting—the provision of advanced services. Staff further states that this does not support the conclusion that Verizon should be able to provide cost support for its UNE and intrastate switched access rates based on a network with advanced services capabilities that do not exist in its existing network, and will not be deployed in its network within the time period covered by the estimates. Staff asserts that Verizon's modeling methodology, by modeling a network with advanced services capabilities that well exceed those currently existing in, or planned for, its network significantly inflates Verizon's cost estimates, and therefore UNE rates.

Staff also contends that the number of DLCs modeled by ICM is excessive making the modeled network inefficient. According to Staff, ICM models too many DLCs. Staff states that:

> Verizon acknowledges that there are more DLCs modeled in the ICM network than exist in Verizon's *actual* network in Illinois. Clearly, this supports the proposition that ICM is inadequate because it cannot be adjusted to reflect a more reasonable network, which is to say one that assumes a reasonable number of DLCs, rather than an excessive number.

(Staff Initial Brief, p. 11, *emphasis* added).

Staff acknowledges that the *Advanced Services Order* states that ADSL technology is the most commonly deployed of these technologies. Verizon Ex. 2.0 at 15. Staff, however, states that:

> Modeling a network that will support ADSL technology anywhere and *everywhere* is clearly inefficient. Moreover, advanced data services, pursuant to Illinois law, have a much lower capacity than those modeled by Verizon in this proceeding – 200 kbps, rather than the 6 mbps that Verizon's hypothetical network is capable of. Staff Ex. 1.0 at 11, 12; *see also,* 220 ILCS 5/13-517 (advanced services defined as data speeds of 200 kbps). As such, the company's modeled network is thirty times the legal threshold for advanced data services.

(Staff Initial Brief, p. 12, *emphasis* added).

According to Staff, cost models that inherently lack the capability of maximizing efficient measures should not be supported. Staff asserts that as the ability to provide high bandwidth services in a network increases, so does the cost of the network. Staff states that the Illinois Legislature has set the penetration benchmark for advanced services availability at 80% of the customer base. 220 ILCS 5/13-517. Staff further states that ICM actually develops 100% penetration of technology that, again, greatly exceeds these requirements. Staff states that in this case, ICM's network design maximizes broadband capability rather than maximizing overall efficiency, which implies a network that is inconsistent with current Illinois public policy.

Finally, Staff acknowledges Verizon's statement that by setting the DLC material and placement investment to zero only causes a $1.23 reduction in loop cost. Staff, however,

disputes Verizon's statement that this amount is not significant. Staff states that a variation on cost of $1.23 per loop may prove to be a crucial factor in competitors' decisions to offer service in Verizon territory, or to decline to do so. Staff further states that a recurring charge of $1.23 is not a minor sum for a CLEC that is competing with an ILEC on a margin that is small to begin with. Moreover, Staff states that setting DLC investment to zero would not negate the impact the DLC has on fiber-copper placement and, therefore, the overall impact of such a reduction is greater than the $1.23, identified by Verizon.

3. IRCA

IRCA asserts that ICM models an overly expensive network by assuming that every customer would have access to a loop that is capable of providing digital services. IRCA asserts that:

> The result of Verizon's presumption, nevertheless, is a higher loop cost than would otherwise result if the model assumed the design of the most efficient plain old telephone service (POTS) network.

(IRCA Initial Brief, Ex. 1, pp. 8-9).

IRCA asserts that it is neither realistic nor efficient to design a network in which no loop in the local network impedes the provision of advanced service and in which all customers have access to a loop capable of providing digital service. (ICM Model Methodology, Book II, p. 7). Like Staff, IRCA also concentrates on Verizon's existing network to support its position that the ICM modeled network differs from Verizon's actual network in Illinois.

IRCA further states that:

> Curiously, Verizon responds to the fact that many of ICM's DLC's "would serve only 1, 2, or a handful of customer" by asserting it "simply isn't true." Verizon Ex. 2 (Tucek Rebuttal) at 17. Nevertheless, Verizon admits that, under Verizon's proposal, 4.7% of DLCs would serve five or fewer customers. Verizon Ex. 2 at 17. Thus, while Verizon may attempt to parse the term "many," to a CLEC who has to pay for them, 207 DLCs (4.7% of 4,370) is

> "many." In the end, the result of Verizon's inefficient DLC modeling assumption is to increase the TELRIC of the 2-wire loop by $1.23, or 4.6% of the calculated loop rate. Verizon apparently views an overstatement of "*only* 4.6 percent" (Verizon Ex. 2 at 17; emphasis added) as no big deal, but it is a material and unjustified increase to the price paid by CLECs.
>
> When the common cost markup is added, the overstatement of costs by "*only* 4.6%" results in an overstated cost per loop of $1.38. IRCA Ex. 2 at 10-11. Such an overstatement can have a real impact. For example, a CLEC leasing 10,000 loops from Verizon each month would pay Verizon an additional $165,600 per year based on the overstated price. *Id*. The impact of Verizon's overstatement is real and material. It is also worth noting that Verizon similarly dismisses concerns expressed by Staff witness Zolnierek in regards to Verizon's modeling of two networks. In response, Verizon states that the increase in modeled investment is less than 2.3% under Verizon's proposal. Verizon Ex. 2 at 21. Again, Verizon dismisses an obvious overstatement of costs as no big deal. The Commission should not accept this continual pattern of overstating costs on the basis that the percentage of inflation is "small."

(IRCA Initial Brief, p. 13).

Finally, IRCA states that the network that Verizon hypothesizes is more expensive than anything Illinois law requires or expects. IRCA states that the recently enacted telecommunications law in Illinois includes a provision that every ILEC must offer or provide advanced service to 80% of its customers within five years unless the ILEC is granted a waiver from this provision. *See* 220 ILCS § 5/13-517. IRCA further states that were it not for the recognition that it is economically unfeasible to do so, the legislature would have required each ILEC to support advanced service to *every* customer rather than to 80% of the ILEC's customers. *IRCA* states that the law would not have allowed for a waiver if a carrier can prove it is not economically feasible to meet even the 80% requirement.

4. Reply

[to be completed by Administrative Law Judge]

5. Commission Conclusion

The Commission is of the opinion that ICM models a network that is consistent with the Commission's Part 791 rules and the FCC's TELRIC requirements. The problem with the positions of Staff and IRCA is that they are attempting an end-run around established Commission and FCC standards that contemplate a hypothetical forward-looking model network. Both Staff and IRCA focus exclusively on Verizon's existing network and this is simply improper. If ICM replicated Verizon's existing network, it would not meet the standards of this Commission and the FCC.

Furthermore, comparisons to Verizon's existing network are misplaced and demonstrate pick and choose approach to network modeling. Staff and IRCA clearly accept the efficiencies of a hypothetical network that result in understated costs. They, however, prefer to apply these standards to the existing network rather than the hypothetical network contemplated by the FCC. This is inconsistent with the plain language of the Commission rules and FCC orders.

B. Type of DLCs

1. Staff

Staff asserts that ICM models the incorrect type of DLC. According to Staff, NGDLCs are technologically advanced DLCs that allow for the provisioning of data services to customers that are beyond 18kft from the serving central office. Staff asserts that NGDLCs are much more costly than traditional DLCs as a result.

Staff complains that the network modeled by ICM is populated exclusively by NGDLC systems. Staff maintains that in the interest of overall efficiency and keeping network design concerns in mind, traditional DLCs should be applied to some degree in ICM, as opposed to the application of NGDLCs to the entire network.

Staff argues that the appropriate TELRIC cost of the loop should be reflective of a reasonable planned network. Staff believes that the use of traditional DLCs in certain areas of the network would be more efficient than the network modeled by ICM. Although Staff does not dispute the fact that NGDLCs are needed, to some extent, in a forward-looking network, Staff does not believe forward-looking networks must contain the most advanced capabilities possible throughout the network. Staff claims that, taken to its logical extreme, ICM requires NGDLC placement throughout the modeled network for UNE rate development.

2. Verizon

Verizon first notes Staff does not provide any citations to the record to support their argument. According to Verizon, Staff's position with respect to the type of DLCs is totally unsupported. Verizon states that Staff does not seem to understand the distinction between a network that does not impede advanced services and the actual provision of those services. According to Verizon, in response to a Verizon data request, Mr. Koch gave the SLC-96 as an example of the traditional loop carrier he is recommending. Verizon states that Mr. Koch does not recognize that Verizon is purchasing the NGDLCs modeled by ICM for use in its network today. Verizon asserts that by comparison, the SLC-96 that Mr. Koch puts forth as a forward-looking, "traditional" DLC does not have the GR-03 capability and ***is no longer manufactured***. Verizon states that the SLC-96 is not a forward-looking technology.

Finally, Verizon states that Staff's statements regarding efficiency and DLCs is misplaced. Verizon asserts that, in fact. ICM's use of NGDLCs is more efficient than the "traditional" DLCs espoused by Mr. Koch. According to Verizon, the GR-303 interface provided by ICM's NGDLCs is more efficient because it allows for greater concentration on the DS-1 links that connect the DLC to the central office.

3. Commission Conclusion

The Commission is of the opinion that ICM models the proper type of DLCs. In light of the fact that the DLC preferred by Staff is no longer manufactured, it is unreasonable to characterize this DLC as a forward-looking technology. Staff's attempt to assert an embedded network standard is rejected.

C. Customer Locations

1. Verizon

Verizon asserts that ICM's modeling of customer location is accurate, reasonable and based on sound analysis. Verizon notes that Staff accepted ICM's loop length calculations.

Verizon explains that ICM calculates customer locations by assigning line count estimates by census block to a grid that is $1/200^{th}$ by $1/200^{th}$ of a degree in size. Verizon notes that the line count estimates by census block were developed by PNR Associates. ICM makes the assignment of customer lines to the grid on the basis of each grid's share of road feet in the wire center.

Verizon asserts that the data that is used to make these calculations is accurate. The grids that are used are mapped to Verizon's wire centers based on the exchange boundaries. According to Verizon, the resulting totals for each wire center is trued up so that the sum of the adjusted demand corresponds to the Automated Reporting Management Information System ("ARMIS") for each wire center. As such, Verizon explains, the sum of the lines assigned to each grid in a wire center equals the total actual line count for the wire center. Verizon asserts that the road feet measure in ICM is taken from the United States Census Bureau's TIGER files, and corresponds to the types of roads along which residential or business development would normally occur, and from which customers would have access to their premises. According to

Verizon, the measure excludes interstate highways, limited access roads, bridges, tunnels, access ramps, alleys, driveways and motorcycle trails.

Verizon further contends that its approach is superior to one that relies on average loop length, or even the distribution of loop lengths, because it accounts for the dispersion among customer locations within a wire center. Verizon states that it is a reasonable approach because it relies on road feet to develop the dispersion among customers and because roads are generally constructed to get somewhere, be it a residence or business location. As proof of its reasonableness, Verizon notes that the total amount of sheath feet modeled by ICM is *1.2% less* than the actual amount in the network. According to Verizon, ICM's customer location inputs have not resulted in too much local loop plant being built in the modeled network. (Tucek Sur,, Verizon Ex. 3.0, p. 56, *emphasis* added)

Verizon also asserts that the testimony of Mr. Hendricks does not provide any real analysis to support IRCA position. According to Verizon, at the core of his testimony is his unsubstantiated and unsupported claim that ICM produces a loop cost that is "too high." Verizon maintains that comparisons between ICM's costs and existing retail rates are not a proper basis for reaching a conclusion regarding the adequacy of ICM's modeling of customer locations.

With regard to IRCA's main argument in their Initial Brief that ICM does not utilize actual (geocoded) customer locations, Verizon contends that the record demonstrates that geocoding is not a superior method of modeling customer locations. Verizon witness Tucek testified that it is a costly and time-consuming endeavor and is "never anywhere near 100% successful." (Tucek Sur., Verizon Ex. 3.0, p. 51). As a result, Verizon asserts that models that rely on geocoded customer locations must employ a proxy method to develop "geocoded" locations for customers that could not be located. On the other hand, Verizon notes that ICM is

not a proxy model for the simple reason that it is company-specific, and is not proffered with a set of default inputs for use by any company other than Verizon.

Further, Verizon criticizes Mr. Hendricks' contention that Verizon knows where its customers are located and that Verizon should utilize this information in developing the inputs to ICM is not a viable recommendation. Verizon cites the testimony of Mr. Tucek, who testified as follows:

> Mr. Hendricks has dramatically over simplified the customer location information that exists in the company records. While addresses exist in Verizon's internal records, they are not always associated with actual customer service locations. They may instead only relate to a billing location, such as a post-office box. Many times the billing location may be a single billing address for multiple service locations. Even when the address corresponds to the service location, often it is a rural route address, which does not have a specific location in terms of latitude and longitude associated with it. Finally, customer address information is contained in several information systems that are not easily tied together, and which were never intended to produce location data that could be used in a model.

(Tucek Reb., Verizon Ex. 2.0, p. 66).

On the issue of statistical sampling as an alternative, Verizon states that Mr. Hendricks does not understand the basics of how ICM operates. Verizon asserts that ICM does not base its cost calculations on the average loop length for a wire center. According to Verizon, ICM uses the customer location inputs at the grid level in the demand table and the wire center locations and boundaries to reconstruct the local exchange network based on discrete sizes of network components and Verizon's engineering guidelines. As Verizon witness Tucek testified:

> It is not possible to model the network with fewer records in the demand table because the table would then represent a much smaller network. In any event, Mr. Hendricks' recommendation calls only for the calculation of the average loop length within a wire center – this information is insufficient to populate even one record in the demand table.

(Tucek Sur., Verizon Ex. 3.0, p. 54).

Moreover, Verizon argues that even if Verizon knew the exact distribution of loop lengths for every wire center, this would not mean that ICM's demand table could be populated or that forward-looking costs would be modeled more accurately. Verizon states that while Mr. Hendricks is correct that loop length is an important driver of loop costs, it is not the only driver. According to Verizon, equally important is the dispersion of customers within a wire center. Verizon asserts that, for example, if a wire center which served only four customers, each with a loop length of 5,000 feet, the cost of serving these customers depends on how dispersed they are from each other. According to Verizon, the costs will be much less if they are all located at one spot than if they were located at the four points of the compass.

Likewise, Verizon states that knowledge of the distribution of loop lengths within a wire center does not provide enough information about the dispersion among customers. Verizon gives the example of two wire centers that have the exact same distribution of loop lengths and the same number of customers and access lines. If the customers in the first wire center are distributed largely along a main north/south road, while the customers in the second are more or less evenly dispersed throughout the wire center, then the average cost of a 2-wire loop in each wire center will differ. According to Verizon, this will be true even though the total number of lines served and the loop length distributions are identical. Hence, Verizon asserts that the average loop length, or even the distribution of loop lengths within a wire center, is insufficient to model the impact of customer dispersion on the cost of a loop. According to Verizon, the best way to accomplish this is with the level of detail contained in ICM's demand table.

2. IRCA

IRCA charges that ICM's modeling of customer locations is inaccurate. In his Direct Testimony, Mr. Hendricks contends that ICM does not utilize actual (geocoded) customer locations.

In his Rebuttal Testimony, Mr. Hendricks abandons his call for use of actual customer location data and instead recommends that the Commission "require Verizon to develop costs based on a statistically significant sample of loop lengths in Verizon's network." (Hendricks Reb., IRCA Ex. 2.0, p. 14).

In their Initial Brief, IRCA characterizes ICM's modeling of customer locations as a "complicated proxy methodology." IRCA asserts that instead, ICM should have relied on actual customer locations. IRCA states that ICM models customer locations by proxy because "nothing is more "proxy" in a typical proxy model than the inability to accurately map customer locations." IRCA goes on to state that, "the Commission rejected the use of proxy models to calculate the FLECs of Ameritech and Verizon (then GTE) in Docket 97-0515…." (IRCA Initial Brief, p. 7).

IRCA further states that

> Actual customer locations are available to Verizon based, for example, on its internal documentation used for record-keeping purposes, network upgrade and expansion planning, and service calls. Verizon maintains these documents and relies on them on a daily basis to run its business. The use of such documentation by ICM would result in much more accurate customer location mapping, leading to more accurate results. Where such information is readily available to the company, the Commission should require the company to use it.

(IRCA Initial Brief, p. 8).

3. Reply

[to be completed by Administrative Law Judge]

4. Commission Conclusion

The Commission is of the opinion that ICM's modeling of customer locations is accurate. Staff also agrees. As Mr. Hendricks admits, his position is result driven. As such, IRCA's position is not supported by a proper analysis that explains why his sampling proposal is better. Indeed, the fact that the total amount of sheath feet modeled by ICM is 1.2% less than the actual amount in the network is proof that the ICM modeling process is reasonable.

D. Two network Approach

1. Verizon

ICM models two separate networks: one is the wholesale local loop network and the other is the retail network. Verizon asserts that the differences in the two model networks relate only to the loops served by DLCs. Verizon states that in order to estimate the costs of unbundled loops, ICM makes the assumption that all such loops served by a DLC are terminated on a Central Office Terminal ("COT"). Verizon explains that the reason for this is that an unbundled loop must be handed off at a voice-grade level. Verizon further states that when such loops are used to serve a retail customer, they are terminated on the trunk side of the switch. Verizon states that such a configuration is said to be integrated and is designated by the acronym IDLC—"Integrated Digital Loop Carrier." (Tucek Sur., Verizon Ex. 3.0, p. 36). According to Verizon, it is not possible to unbundle an IDLC loop, since by definition an unbundled loop must terminate at the competitive local exchange carrier ("CLEC") collocation space.

Verizon also explains that, in the real network, retail loops that are served via IDLC are unbundled in one of two ways. Either they are terminated on a COT through a Universal Digital Loop Carrier ("UDLC") configuration, or they are transferred to copper facilities and terminated in a D4 channel bank. Verizon further explains that ICM models the cost of an unbundled loop by assuming the UDLC configuration for all loops. According to Verizon, this assumption

produces a lower cost estimate because it takes advantage of the already existing fiber link between the DLC and the office, thereby eliminating the cost of any copper feeder facilities that might actually be used. Verizon asserts that costs are also lower because ICM assumes the maximum possible fill on the COTs in the wire center.

With respect to the switched access filing, Verizon contends that ICM properly assumes such lines are terminated on the trunk side of the switch using IDLC. This is because that is how such loops would be provisioned when they are not unbundled. Verizon states that as some of these loops will be unbundled in the real network and not provisioned with IDLC, ICM's resulting DS-1 port utilization will be greater than what can be actually realized. Verizon accordingly states that the modeled trunk port LRSICs are understated.

Verizon asserts that ICM's dual network approach understates the cost of providing both unbundled and retail loops out of a single network. This is because the mix of end-users served by Verizon and by CLECs will fluctuate over time. As stated by Verizon witness Tucek:

> Because Verizon must build and maintain a network that serves both its own and the CLECs' end-user customers, there will be fewer end-users terminated on COTs than the model assumes. Likewise, there will be fewer end-users terminated on the trunk side of the switch than the model assumes in the retail configuration. Consequently, the per-line cost of a COT or trunk-side termination in a single network will be higher than what either modeled network produces.

(Tucek Reb., Verizon Ex. 2.0, pp. 37-38).

2. AT&T and Staff

Staff witness Zolnierek claims that ICM's two network approach results in a greater level of modeled investment for the wholesale configuration. In their Initial Brief, AT&T stated that it supported Staff's position.

AT&T and Staff complain that ICM models different network configurations when estimating wholesale and retail costs. They state that the effect of this approach is to create different costs for the same network element depending on whether it is being purchased as a UNE or being used by Verizon to provide a retail service. They assert that Dr. Zolnierek found that aggregate wholesale switch investment in the model exceeds aggregate retail investment though there is actually only one network that will serve both. Staff and IRCA also dispute Verizon claims that modeling two networks reduces costs.

In its Initial Brief, AT&T states that:

> Verizon's attempt to use its cost models to estimate different common costs for wholesale and retail products is not new. The inappropriate use of two sets of modeled costs, one for wholesale and one for retail, was rejected by the Michigan Public Service Commission in Verizon's most recent generic cost case in that state. See *In the matter, on the Commission's own motion, to consider the total service long run incremental costs for all access, toll, and local exchange services provided by GTE NORTH INCORPORATED,* MPSC Case No. U-11832, Order p. 6 (May 3, 2000). Although the dual set of costs developed by Verizon in that case was limited to common costs, Verizon was ordered to use a single set of costs for both retail and wholesale services. *Id.* The Commission in this case should likewise reject the concept that the costs for a service or element vary depending on whether Verizon is selling it as a retail product or a wholesale offering.

(AT&T Initial Brief, pp. 18-19).

Verizon states that the positions of Staff and AT&T ignore the benefits and the reasons for Verizon adopting this approach. Verizon asserts that Staff's testimony does not address the fact that Verizon's separate network approach results in lower costs, nor does it offer an alternative methodology for estimating the TELRIC of an unbundled loop..

Additionally, Verizon asserts that while the wholesale modeled investment is greater than that of the retail configuration, the evidence demonstrates that the increase is not significant. Verizon asserts that Staff ignores this point. According to Verizon, for the two affected accounts

(Digital Electronic Switching and Circuit Equipment), the increase in the modeled investment is less than 2.3% and 1.9% for the 12kf and 18kf runs, respectively. For both runs, the increase in *total* modeled investment is less than 0.5%.

3. Reply

[to be completed by Administrative Law Judge]

4. Commission Conclusion

The record demonstrates that the benefits of utilizing a separate network approach outweigh Staff's and AT&T's imagined defects. As such, Staff's criticism is rejected.

VI.
ICM Expense Inputs

As stated above, in deciding Phase I issues, the Commission must distinguish between modeling issues and ICM input issues. Modeling issues relate to the propriety of ICM itself—a Phase I issue. In producing costs, ICM incorporates numerous expense inputs. The propriety of ICM's cost inputs as they relate to UNEs are Phase II issues. However, in many instances below, the Commission opines that the inputs as presented appear reasonable.

A. C.A. Turner Indices

1. Verizon

Verizon asserts that ICM does not utilize embedded or historical costs as inputs. Verizon explains that Plant costs used as ICM expense inputs are adjusted from a historical book cost to a reproduction cost basis using the composite C. A. Turner indexes shown in Tucek Rebuttal Attachment DGT-1.

Verizon asserts that the C. A. Turner indices are publicly available and their use by Verizon is fully documented in the Company's cost study filing. Verizon asserts that the cost

study filing does contain a description of the indices, and it explains their development and how they are to be used.

Verizon further states that while Staff is correct that the FCC did not approve the use of this index in *The Matter Of Local Exchange Carriers' Rates, Terms, And Conditions For Expanded Interconnection Through Physical Collocation For Special Access And Switched Transport,* CC Docket No. 93-162, released June 13, 1997, the FCC has more recently clarified its position. According to Verizon, the FCC's opinion with respect to the C. A. Turner Indices was more recently summarized as follows:

> Ameritech and GTE advocate the use of the Turner Price Index to convert the embedded cost information contained in the depreciation data to costs measured in current dollars. [FN656] We note, however, that this index and the data underlying it are not on the public record. We *prefer* to rely on public data *when available*. …

Tenth Report and Order, In The Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Forward-Looking Mechanism For High Cost Support For Non-Rural LECs, CC Docket No. 97-160 Released November 2, 1999 (*emphasis* supplied).

Verizon states that while the FCC's states a *preference* for public data when *available,* it does not state that use of this index is *per se* unacceptable. Verizon asserts that the problem is that a narrowly-focused set of indices such as the C. A. Turner is what is required in the instant case. Verizon explains that these indices are useful because they are tailored to the industry and to the plant types whose reproduction cost they measure. As Verizon witness Tucek stated:

> The standard of a broadly-based index required by the FCC and embraced by Mr. Koch is nonsensical. There is no alternative broadly-based index that reflects just the cost components underlying the construction of telephone plant – if such an alternative index existed, then it would not be broadly-based.

(Tucek Sur., Verizon Ex. 3.0, p. 27).

Additionally, Verizon takes issue with Staff witness Mr. Koch's statement that the indices are used by only a handful of users. Verizon notes that it is logical that the number of companies using the indices is limited to the number of companies in the industry. It would not be reasonable to require that such indices be used by companies that have no telephone plant.

On the issue of the verifiability of the indices, Verizon cites the testimony of Mr. Tucek:

> I do not know for certain what the FCC and Mr. Koch mean by "verifiable" – presumably it means the ability to construct the indices given the same raw data that AUS Consultants used. This is not a reasonable requirement, since both the data and the resulting indices are the intellectual property of AUS. Moreover, there is no reason to believe that AUS is not capable of adequately constructing telephone plant indices. AUS has an active valuation practice with customers as diverse as AT&T and IBM. In any event, as I note below in my discussion of Ms. Marshall's testimony, the calculations underlying Verizon's use of the indices have been provided with Verizon's cost study and are available for verification by Staff or any other party.

(Tucek Sur., Verizon Ex. 3.0, p. 28).

Verizon further notes that in Florida Docket No. 990469A-TP, AT&T witness Brian F. Pitkin relied on the C. A. Turner indices in his analysis of the costs presented by BellSouth. In justifying his use of the indices, he testified as follows:

> And I believe BellSouth likely has a copy of the C. A. Turner Telephone Plant Index. It's a very common source used in the industry.

(FL Docket No. 990649A-TP, Dep. of Brian F. Pitkin, Jan. 18, 2002, p. 26).

2. Staff

Staff opposes the use of the C.A. Turner indices stating that the FCC rejected the use of these indices as shown below:

> When using indices of inflation to develop direct costs, we use indices that are verifiable, developed for broad sectors of the economy (e.g., the consumer price index or the producer price index), used by a variety of users (e.g., government agencies and a

> large cross section of companies within the private sector) and routinely developed by impartial government agencies (e.g., the U.S. Bureau of Labor Statistics). *The C.A. Turner Telephone Plant Index, however, is unverifiable, narrowly focused, and does not appear to be widely accepted because it is used by a small number of users.*

(Staff Initial Brief, p. 6, *emphasis* supplied, *citing Local Exchange Carriers; Rates, Terms and Conditions for Expanded Interconnection Through physical collocation for Special Access and Switched Transport*, CC Docket No. 93-162, 12 FCC Rcd 18730, Release Number 97-208, ¶ 184 (June 13, 1997) (*emphasis* added)).

Staff asserts that there is no compelling reason to conclude that the same concerns do not exist in Illinois for GTE's successor company, Verizon. Staff states that although no actual rate is produced by this analysis, the analysis is used here to support and justify the costs produced by ICM. Staff urges the Commission to take notice of the FCC's decision.

Staff also disagrees with the use of the C. A. Turner indexes to adjust Verizon's 21xx accounts to a reproduction cost (as described in Tucek Reb, Verizon Ex. 2.0, Att. DGT-1). This issue is discussed in below in conjunction with the ARMIS data issue.

3. Reply

[to be completed by Administrative Law Judge]

4. Commission Conclusion

This is an input issue. However, the Commission agrees with Verizon that there is no alternative broadly-based index that reflects just the cost components underlying the construction of telephone plant. Indeed, one existed, then it would not be broadly-based. Staff criticizes Verizon's use of this index, but does not provide any alternative; neither does Staff address whether the costs developed with these indices are reasonable. As such, use of the C.A. Turner Index is reasonable.

B. Operating Expense Inputs

1. Verizon

Verizon explains that in modeling operating expenses and other costs, ICM utilizes 1999 ARMIS data as a starting point and then adjusts these expenses to make them forward-looking. Verizon notes that ICM estimates the forward-looking cost of the *entire* network, not just an individual service. Accordingly, Verizon states that the actual operating expenses for the *entire* company are the best starting point for ICM's modeled operating expenses. Verizon asserts that this approach is sound and produces accurate forward-looking expenses.

Verizon describes the process in which the 1999 ARMIS operating expenses are adjusted:

- The adjustment for account 672860 reflects the removal of a credit for the net settlement gains and curtailment losses on pensions, other post employee benefits, and supplemental employee retirement benefits;
- The normalization adjustment for account 6212 reflects removal of out-of-period expense true-ups dealing with Local Number Portability (LNP) costs related to 1997 and 1998 that were recorded in 1999. A related adjustment to account 2212 (Digital Electronic Switching) has also been made to remove the 1997 and 1998 out-of-period true-ups relating to the LNP investment costs;
- An adjustment to account 2212 (Digital Electronic Switching) has also been made to remove the 1997 and 1998 out-of-period true-ups relating to the LNP investment costs;
- Accounts relating Analog Electronic Switching (2211 and 6211), Electromechanical Switching (2215 and 6215) and Aerial Wire (2431 and 6431) have been eliminated;
- Costs modeled by ICM reflect the adjusted costs of the following 21xx plant accounts:
    1. The non-central office portion of land and buildings (2111 and 2121);
    2. Motor Vehicles (2112);
    3. Special Purpose Vehicles (2114);
    4. Garage Work Equipment (2115);
    5. Other Work Equipment (2116);
    6. Furniture (2122);

7. Office Equipment (2123); and

8. General Purpose Computers (2124).

These costs are not based on the embedded plant balances, but rather they were adjusted to a reproduction cost basis using the composite C. A. Turner indexes shown in Rebuttal Attachment DGT-1; and

- ICM's operating expenses have been reduced to reflect estimated savings from the merger between GTE and Bell Atlantic. This adjustment represents 50 percent of the merger savings allocated to Illinois and has reduced the ARMIS operating expenses used by 3.0%.

(*See* Tucek Reb., Verizon Ex. 2.0, pp. 28-29).

With respect to the argument of Staff and AT&T that Verizon should apply a productivity factor to all operating expenses so that the operating expenses are brought to current levels, Verizon responds that the problem with this argument is that Staff does not take into account that the data also does not reflect any inflation that has occurred since 1999. As such, Verizon states that Staff's proposed adjustment is unfair and one-sided.

Verizon asserts that in order to make this adjustment more accurate, an inflation adjustment would have to also be added. Consequently, Verizon believes that an adjustment to reflect productivity gains from 1999 through 2000 is only warranted if it is accompanied by an adjustment for inflation. Verizon is willing to adjust ICM's inputs to reflect Mr. Zolnierek's proposed 3.3% annual productivity offset and an inflation adjustment of 2.27% based on the GDP deflator.

Verizon also states that it is surprised by Staff's criticism that plant carrying costs calculated with C.A. Turner Indices "*exceed the actual carrying costs incurred by Verizon.…*" Verizon notes that in essence, Staff is asserting that Verizon's embedded costs should be the basis for judging the costs utilized by ICM. Verizon contends that in making this criticism, Verizon states that Staff has completely lost sight of the standards by which to judge ICM. Verizon asserts that the Commission's rules require that costs be modeled as if the service were

being offered based on forward-looking costs, and ignoring embedded or historical costs. 83 Ill Adm. Code § 791.20(c). Verizon contends that the use of embedded costs contemplated by Staff violates both Commission rules and FCC TELRIC requirements.

With respect to merger savings, Verizon asserts that Staff's position is one-sided and unfair. Verizon states that adjusting costs downward by an amount equal to 50% of the expected merger savings is consistent with the order approving the merger—indeed, Verizon states that it is more than consistent since it assumes that the merger savings are immediately realized. Nonetheless, Verizon accepts Staff's adjustment provided that at the same time, 50% of the savings is recovered in rates. Verizon, however, notes that the required modification of the fixed allocator would decrease its denominator by an amount equal to 100% of the merger savings and increase its numerator by 50% of the merger savings. Verizon notes that the resulting fixed allocator may exceed Ms. Marshall's recommended ceiling. Such an outcome would not reflect an increase in Verizon's common costs, but would only reflect a decision to recognize the division of the merger savings via an across-the-board adjustment, rather than by account.

Finally, regarding criticisms of ICM for not using data more recent than 1999 ARMIS data, Verizon explains that Verizon chose 1999 ARMIS data for two reasons. First, as Mr. Koch concedes, with a deadline of December 2000 for the Company to file its study, the 1999 ARMIS data was the most recent data available. The 2000 ARMIS data was not filed with the FCC until March 30, 2001. Verizon witness Tucek testified that, after the data are filed with the FCC, it takes 90 to 120 days to prepare the expenses inputs for ICM. Accordingly, Verizon states that it was not possible to use 2000 ARMIS data. Additionally, Verizon asserts that even though 2000 demand data would have been available earlier than the ARMIS data, it still would not have been available in time for the required filing date. Also, Verizon states that the use of 2000 demand

data and 1999 ARMIS data would have resulted in a mismatch between the operating expenses and the demand levels that generated them.

Verizon states that the second reason for using 1999 ARMIS data relates to Verizon's sale of wire centers to Citizens Telecommunications of Illinois. Verizon states that if ICM utilized 2000 ARMIS data, the operating expenses and plant account balances would have been inconsistent. As such, Verizon asserts that the latest year available for which the ARMIS data matched the demand data was 1999. Verizon maintains that use of year 2000 ARMIS data would have reflected two differently sized companies—a much larger company for 11 months, and the existing company for only one month. Verizon witness Tucek explained that the network modeled by ICM includes the sold wire centers in order to preserve the relationship between the demand data and the ARMIS data, but excludes them in computing the statewide average costs. "According to Verizon, this is necessary because … you need to maintain the size of the network to reflect the scale of operations that generated the operating expenses." (Tr. at 25).

2. Staff

Staff claims that the data utilized in Verizon's analysis contains costs that should not be borne by other carriers. Staff Ex. 4.1. Staff states that the forward-looking adjustments that Verizon offered to make during the course of this proceeding were already known to Staff and are not sufficient. Staff's primary concern is that these costs do not include any productivity gains experienced by Verizon since 1999. According to Staff, it is illogical for the company to argue on the one hand that the 1999 ARMIS expense data has been adjusted to make it forward-looking, while on the other hand arguing that no adjustment to 1999 demand can be made to achieve a forward looking result. Staff also asserts that 100% of net merger related savings should be removed from the 1999 data in order to make it forward-looking.

Staff also disagrees with ICM's use of the composite C. A. Turner indexes to adjust Verizon's 21xx accounts to a reproduction cost (as described in Tucek Reb, Verizon Ex. 2.0, Att. DGT-1). Ms. Marshall states that "(c)arrying costs calculated in this manner significantly ***exceed the actual carrying costs incurred by Verizon***, and are unrelated to forward-looking plant investment based on vendor pricing." (Marshall Reb., Staff Ex. 4.1, p. 3). In response to Verizon data request VZ-STAFF 4.11, Ms. Marshall believes that the "actual carrying costs" should be based on the 13-month average book costs.

Staff also takes issue with Verizon's statement that 1999 demand data was the most recent demand data available to the Company in time for the required filing date of the ICM study. Verizon Ex. 2.0 at 31. Staff asserts that if this were true, then forward-looking demand data cannot be determined for use in this study. According to Staff, this is simply not the case. Staff states that companies routinely project their anticipated demand for services as part of the planning process. Staff states that Verizon's ability to project future demand is illustrated by its own projection of demand ten years into the future for use in its New York UNE case. *See Order on Unbundled Network Element Rates*, Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements, New York PSC Case 98-C-1357 (January 28, 2002). Staff states that Verizon is able to provide forward-looking demand data, and should be required to do so in this case.

Staff also asserts that the overall demand for telecommunications services tends to increase over time and any increase in demand will spread Verizon's shared and common costs over a larger pool of customers. As such, Staff states that a lower per unit cost will inevitably develop. Staff argues that Verizon's use of historical demand data is not forward looking, and,

accordingly, does not reflect any increase in demand: this, of course, results in *greater* shared and common costs per unit.

3. AT&T

In their Initial Brief, AT&T supported Staff's position regarding ARMIS data. AT&T complains that 1999 historical ARMIS data costs have not been adjusted to reflect any productivity gains since 1999. AT&T also asserts that the 1999 ARMIS data used in the expense module of ICM actually reflects expenses incurred by Verizon's operations in Illinois prior to the time it sold off a portion of several exchanges to another telephone company in 2000. AT&T claims that no adjustment was made to reflect any differences in the expenses between the retained exchanges and those that were sold. AT&T also asserts that Mr. Tucek did not know if the exchanges that were sold represented rural exchanges with higher average costs because Verizon did not segregate operating expenses attributable to the sold exchanges from those incurred attributable to the serving area retained by Verizon after the sale. According to AT&T, Mr. Tucek conceded that the expense to investment ratios derived from the use of the 1999 ARMIS data reflect a much different serving area than Verizon currently has.

Finally, AT&T states that the use of historical data from 1999 related to a serving area that Verizon will not be serving on a going forward basis and unadjusted for any productivity gains does not meet the Illinois Rules under part 791.40(c) or the FCC's standards under 47 CFR 51.505(d) for a forward-looking cost study. AT&T further states that "the use of ICM for estimating forward-looking costs should be rejected."

4. Reply

[to be completed by Administrative Law Judge]

5. Commission Conclusion

The Commission first notes that the propriety of cost inputs is a Phase II issue. As such, no party has presented any arguments relating to these inputs that warrants a rejection of ICM.

Additionally it must be noted that the Staff, IRCA and AT&T have simply lost sight of the fact that ICM is a model. Accordingly, the issue before this Commission in this proceeding is whether it operates in a reasonable fashion. None of these parties discussed the adjustments made to make the ARMIS data forward-looking. No party proposed a better alternative to using this data as a starting point. The approach of these parties, however, is to throw as many criticisms as possible against the wall with the hope that some will stick—none of these criticisms have substance. The Commission rejects each of these parties arguments as meritless.

The Commission is of the opinion that, as presented, the ICM properly utilizes forward-looking costs as inputs. The Commission agrees with Verizon that its cost study complies with Part 791.20(c) of the rules in that it assumes the service is being offered for the first time. Verizon properly adjusted the data to be forward-looking.

The Commission accepts the application of Staff's proposed productivity factor to all operating expenses, but Verizon is correct that an inflation adjustment must also be added. As such, the Commission will require that ICM's inputs be adjusted to reflect Mr. Zolnierek's proposed 3.3% annual productivity offset and an inflation adjustment of 2.27% based on the GDP deflator.

Additionally, the Commission rejects Staff's criticism regarding the calculation of plant carrying costs calculated with C.A. Turner Indices. The Commission agrees that Staff is asserting that embedded costs should be the basis for judging the costs utilized by ICM.

The Commission also accepts Staff's merger savings adjustment with the caveat that at the same time, 50% of the savings is recovered in rates. The Commission agrees with Verizon

that this would require the modification of the fixed allocator so that the denominator would decrease by an amount equal to 100% of the merger savings and the numerator would increase by 50% of the merger savings. Further, the Commission acknowledges that this change in the fixed allocator does not reflect an increase in the amount Verizon's of common costs, but is only a device to effectuate the sharing of the merger savings the Commission previously ordered.

Finally, the Commission agrees with Verizon that with a deadline of December 2000 for the Company to file its study, the 1999 ARMIS data was the most recent data available. Further, the Commission agrees that the use of 1999 ARMIS data was necessary to in order to account for Verizon's sale of wire centers to Citizens Telecommunications of Illinois. The Commission is of the opinion that use of year 2000 ARMIS data would have reflected two differently sized companies—a much larger company for 11 months, and the existing company for only one month. This would have been unacceptable.

C. Shared Costs

1. Verizon

ICM contains a "Shared Costs Included" user option. (Tucek Reb., Verizon Ex. 2.0, p. 42). According to Verizon, when this option is selected, ICM includes these shared costs in the numerator of the expense-to-investment ratio for each network cost pool. Verizon states that this results in the assignment of shared costs to each cost pool based on an analysis of the 1999 ARMIS data at a 6-digit account level by work center—similar to the fashion that the expense portion of direct costs are assigned to the same cost pools. Verizon asserts that if the "Shared Costs Included" user option is not selected, these costs are allocated pursuant to a common cost allocator. Therefore, Verizon states, if the Commission rejects the use of the "Shared Costs Included" option, an adjustment to the common cost allocator would be required for recovery of these expenses.

Verizon provides a thorough description of how ICM models and assigns shared expenses. Verizon states that one portion of ICM's shared costs is related to the carrying costs and operating expenses associated with general support assets such as furniture, general purpose computers, and motor vehicles. These accounts include the following accounts:

- the non-central office portion of land and buildings (2111 and 2121);
- Motor Vehicles (2112);
- Special Purpose Vehicles (2114);
- Garage Work Equipment (2115);
- Other Work Equipment (2116);
- Furniture (2122);
- Office Equipment (2123); and
- General Purpose Computers (2124).

(Tucek Reb., Verizon Ex. 2.0, pp. 7-9, 43-45).

Additionally, with respect to the 21xx[4] plant accounts listed above, Verizon states that a corresponding part of the following 61xx accounts is also included as shared expenses:

- Motor Vehicle Expense (6112);
- Other Work Equipment Expense (6116);
- Land and Building Expense (6121);
- Furniture and Artworks Expense (6122); and
- Office Equipment Expense (6123).

(Tucek Reb., Verizon Ex. 2.0, pp. 7-9, 43).

Verizon explains that the assignment of the 61xx accounts associated with the 21xx accounts is based on an analysis of accounting information at a 6-digit level of detail, by work

group. Verizon asserts that, for example, if a certain dollar amount of motor vehicle expense is recorded for a work group associated with poles, then that dollar amount is assigned to the pole cost pool. Verizon further asserts that this is the same analysis used to assign operating expenses recorded in the other accounts to the cost pools. According to Verizon, the assignments of the 21xx plant accounts follow the assignment of the corresponding 61xx expense accounts.

Verizon additionally asserts that ICM also identifies the following accounts as "shared" costs:

- Power Expense (6531);
- Plant Operations Administration Expense (6534); and
- Engineering Expense (6535).

(Tucek Reb., Verizon Ex. 2.0, p. 44).

Verizon explains that account 6531 records the cost of electrical power used to operate the telecommunications network. Verizon states that based on an analysis of power usage in a digital central office, 79.4% of these costs are assigned to the Switching cost pool and 18.8% are assigned to the Transmission cost pool. Verizon further states that the remainder, less than 2%, is assigned to the other network cost pools. With respect to Account 6534, Verizon states that records costs incurred in the general administration of plant operations. With respect to Account 6535, Verizon asserts that records costs incurred in the general engineering of the telecommunications plant which are not directly chargeable to a project. The bulk of these two accounts (98%) is assigned to the network cost pools based largely on the distribution of the expenses that are directly assigned. Of this amount, 43% is assigned to the six cable cost pools and to the pole and conduit cost pools; 36% is assigned to switching and the remainder is assigned to transmission.

[4] The 21xx accounts are referred to as "general support assets" in ICM's documentation.

Verizon states that the final portion of the "shared" costs are expenses recorded in the following three 67xx accounts:

- Human Resources (6723);
- Information Management (6724); and
- Other General and Administrative (6728).

(Tucek Reb., Verizon Ex. 2.0, p. 45).

According to Verizon, 98% of these accounts are treated as common costs by ICM, with the remainder assigned directly or based on the distribution of the expenses that are directly assigned.

Verizon witness Tucek testified that the issue before the Commission is whether ICM's assignment of the above shared costs is reasonable:

> These costs represent resources that are used to provide two or more services, so they are shared. But, by the same logic, a pole or a cable sheath is a shared cost since these resources are used to provide unbundled loops, switched and special access lines, interoffice transport, etc. It is clear that by modeling the physical network, we can reasonably determine how much of a pole, for example, is needed on average to provide an unbundled 2-wire loop. I don't believe that any party can credibly argue that the cost of a pole not be included in the direct costs of the various services that use poles. So what really is at issue here is whether ICM's assignment of the costs it labels as "shared" is reasonable. I believe it is, because it is based on the same process that assigns other operating expenses to the network cost pools and, ultimately, to the per-unit TELRICs and LRSICs.

(Tucek Reb., Verizon Ex. 2.0, p. 45).

Verizon also proposes a calibration adjustment. Mr. Tucek explained this adjustment as follows:

> In developing the expense-to-investment ratios used to model operating expenses, ICM adjusts the reproduction cost of the existing network so that it equals the modeled investment for three broad categories of investment: switching, transmission and

> outside plant (OSP). … The result of this calibration operation is that the expense-to-investment ratios do not recover all of the costs that enter into their numerators. The easiest way to adjust for this calibration shortfall is to modify the fixed allocator by removing the shortfall from the allocator's denominator and adding it to the numerator. … Note that the amount of the shortfall varies, depending on whether the costs ICM labels as "shared" are included or excluded from the per-unit TELRICS and LRSICs.

(Tucek Reb., Verizon Ex. 2.0, pp. 47-48).

Verizon states that this adjustment is consistent with Staff's acknowledgement that a recalculation of the allocator would be necessary.

Verizon notes that ICM should not be rejected because there is a disagreement over the assignment of these costs. Verizon asserts ICM is flexible and can either include or exclude these costs from the TELRIC and LRSIC estimates. Verizon states that a disagreement over where to assign these costs should not result in a disallowance. Rather, Verizon states that if these costs are excluded from the per-unit costs, then some mechanism for their recovery must be developed.

Regarding Staff's position on the variance between the percentage of mark-ups for shared costs related to the provision of UNEs and access services, Verizon states that Staff's position is based on a misunderstanding of how ICM assigns shared costs. Verizon witness Tucek testified that "(t)his variation is due to the fact that different services use different amounts and proportions of the plant associated with different cost pools, and to the fact that each cost pool is assigned a different proportion of the costs ICM labels as 'shared,' based on the analysis of the ARMIS data at a 6-digit account level by work center." (Tucek Reb., Verizon Ex. 2.0, p. 46). As Verizon witness Tucek further testified:

> (t)his variation is to be expected and only looks questionable if one assumes these costs should be spread evenly across the entire network. However, such an assumption would be incorrect. For example, it makes sense that power expenses (account 6531) be

> assigned largely to switching and transmission, since these are the network components that utilize most of the power.

(Tucek Reb., Verizon Ex. 2.0, p. 46).

Verizon contends that Staff's contention that ICM's overall level of shared costs is too high is similarly flawed. As set forth in Verizon witness Tucek's Rebuttal Testimony and attached exhibit DGT-4, if shared costs are excluded from the TELRICs and LRSICs calculated by ICM and, instead, included in the fixed allocator, the result is a combined allocator for shared and common that is below the 28.86% threshold advocated by Ms. Marshall. Accordingly, Verizon states that using Ms. Marshall's own standard, the overall level of shared costs determined by ICM is not too high.

Additionally, Verizon agrees with Ms. Marshall that the fixed allocator will have to be recalculated after all other adjustments to ICM have been finalized. Verizon states that the record demonstrates that anything that would affect the direct costs, whether it be through the level of modeled investment or through the amount of operating expenses, would require such a recalculation be included. Similarly, Verizon notes that the reclassification of costs from those included in the denominator of the allocator to those included in the numerator would also require a recalculation.

Further, Verizon states that Staff's position on the calibration adjustment is inconsistent with its Staff's position regarding the "…importance of reflecting any change in the amount of directly assigned costs, including shared costs, in the calculation" of the fixed allocator. (Marshall Reb., Staff Ex. 4.1, pp. 7-8). Verizon states that this adjustment is consistent with Ms. Marshall's acknowledgement that a recalculation of the allocator would be necessary.

With respect to Staff's contention that this adjustment was not timely and constituted improper rebuttal, Staff is incorrect because Mr. Tucek was responding to Ms. Marshall's Direct

Testimony concerning the calculation of the fixed allocator. As Mr. Tucek stated in Surrebuttal Testimony:

> If the adjustment is not made, then in total the amount of direct and shared costs reflected in the LRSICs and TELRICs will have changed from the $86.7 million dollars identified in the numerators of ICM's expense-to-investment ratios to only $81.9 million. The $6.8 million shortfall is clearly a change in the amount identified as ICM's forward-looking costs, and adjusting the fixed-allocator to reflect this change is entirely consistent with the position Ms. Marshall took in her Direct Testimony.

(Tucek Sur., Verizon Ex. 3.0, p. 43).

Further, statements that Mr. Tucek's calibration adjustment constituted improper rebuttal are of no consequence. Verizon notes that aside from the fact that the adjustment constituted proper rebuttal to Ms. Marshall's statements, Staff did not make any motions to strike and Mr. Tucek's testimony was admitted into the record.

With respect to arguments that ICM allows double recovery, Verizon responds that Staff and AT&T are incorrect. Verizon states that although ICM models two separate networks, the record demonstrates that the shared costs modeled by ICM are assigned to the basic components that make up the network—the poles, the cables, etc. Verizon asserts that these in turn are combined to create Verizon's forward-looking per-unit TELRICs and LRSICs. As Verizon witness Tucek testified, "(u)nless, for example, Verizon could manage to sell a loop to one of its end users and at the same time unbundle the same loop for use by a CLEC, no double recovery is possible." (Tucek Sur., Verizon Ex. 3.0, pp. 42-43).

2. Staff

In her Direct testimony, Staff witness Marshall expresses the following concerns regarding the overall level of Verizon's shared costs:

> Schedules 2 and 3 attached to this testimony illustrates the wide variance in the percentage mark-ups for shared costs related to the

> provision of UNEs and access services. For some services the mark-up appears to be unreasonably high. Verizon should provide detailed information supporting its mark-ups for shared costs and verify how each item of shared cost is related to the service to which it is assigned.
>
> To the extent that shared costs are allocated using an expense to investment ratio, it will also be necessary to re-calculate those ratios to incorporate any other changes to Verizon's cost studies that may be required. This step should be performed after all adjustments or updates to amounts of expense and investment have been determined and immediately before the calculation of the common costs allocator.

(Marshall Dir., Staff Ex. 4.0, p. 7).

Staff also opposes Mr. Tucek's "calibration adjustment." (Marshall Reb., Staff Ex. 4.1, pp. 7-8). Ms. Marshall testified that this adjustment was not timely and constituted improper rebuttal.

Finally, in her Rebuttal Testimony, Ms. Marshall stated that ICM's modeling of shared costs creates an opportunity for double recovery. In their Initial Brief, Staff states that ICM does not attempt to model Verizon's actual demand for wholesale services versus retail services. Staff states that Verizon's failure to assign a portion of shared costs to retail services and the remaining portion to wholesale services creates an opportunity for double counting or improper allocation of shared expenses. According to Staff, Verizon's methodology results in some distortion of the allocation of shared costs that would occur if a single run were used.

In addition, Staff's Initial Brief also contends that Verizon's allocation of shared costs appears to be unreasonably high. Staff asserts that the methodology used to calculate the amount of shared costs included in the rate of each element or service is unclear. In particular, Staff states that wide variances exist in the percentage mark-ups for the Company's shared costs that are related to the provisioning of access services. For instance, Staff states that the mark-up for a number of the Company's services is unreasonably high.

Staff also cites a Michigan Public Service Commission decision for the proposition that "other states have investigated Verizon's calculation of its shared and common costs and determined that much lower allocations of shared and common costs are appropriate." Staff states that Michigan reduced Verizon's calculation of Direct Costs, as well as Shared and Common Costs by 20%. *See also Opinion and Order* at 5-7, *In the matter, on the Commission's own motion, to consider the total service long run incremental costs for all access, toll, and local exchange services provided by GTE North Incorporated,* Michigan PSC Case No. U-11832 (May 3, 2000).

Finally, Staff states that to the extent that shared costs are allocated using an expense to investment ratio, it will also be necessary to re-calculate those ratios to incorporate any other changes to Verizon's cost studies that may be required. However, Staff states that until Verizon supports its mark-ups for shared costs and verifies how each item of shared cost is related to the service to which it is assigned, these calculations should be rejected.

3. AT&T

Similar to Staff, AT&T asserts that Verizon's failure to assign a portion of shared costs to retail services and the remaining portion to wholesale services creates an opportunity for double counting or improper allocation of shared expenses. AT&T states that Verizon's methodology results in some distortion of the allocation of shared costs that would occur if a single run were used.

AT&T also cites the Michigan Public Service Commission reached the same conclusion in connection with its review of Verizon's two common cost studies. AT&T also states that a model that generates two separate sets of shared costs for wholesale and retail services creates the obvious potential for anti-competitive behavior.

4. Reply

[to be completed by Administrative Law Judge]

5. Commission Conclusion

The Commission is of the opinion that ICM's "Shared Costs Included" user option is reasonable. Verizon has provided a thorough description of how ICM models and assigns shared expenses. The arguments of Staff and AT&T regarding double counting are rejected. As Verizon stated, unless Verizon could manage to sell a loop to one of its end users and at the same time unbundle the same loop for use by a CLEC, no double recovery is possible.

Finally, Verizon's calibration adjustment is also adopted. While Staff presented procedural objections to this adjustment, none of which were meritorious, Staff did not present any substantive analysis on this point. The Commission is of the opinion that the adjustment is reasonable.

VII.
Comparisons To Verizon's Retail Monthly Access Charge Are Improper

A. Staff and IRCA

Both Staff and IRCA compare the ICM loop cost to Verizon's residential access line rate. IRCA witness Hendricks asserts that the UNE loop rate is higher than Verizon's monthly access charge and, thus, IRCA members would not be able to compete. In his Direct Testimony, Staff witness Koch states that:

> As for the loop, it is a simple logical conclusion that the loop rate should be less than Verizon's retail network access line rates. However, the ICM develops loop rates that *exceed* retail access line rates. Either the current retail access line rates need to be increased, or ICM is inflating the price.

(Koch Dir., Staff Ex. 1.0, p. 9).

Mr. Hendricks recommends that the Commission establish an interim UNE loop rate equal to the ratio of loop rates to local service rates that Verizon experiences in other states.

B. Verizon

Verizon responds that this phase of the proceeding does not include review of UNE rates, and thus, Staff and IRCA comparisons to retail monthly access charges are incorrect and indicative of their misunderstanding of the ratemaking process. Verizon asserts that it is anything but "a simple logical conclusion" that the retail monthly access rate should bear any similarity to the UNE loop cost. According to Verizon, the retail monthly access rate is a product of the retail rate design. As such, Verizon maintains, the cost of providing a loop, or service for that matter, is not the only factor in determining the monthly rate. For example, Verizon states that its monthly local service retail rate excludes a contribution to common costs. Because the FCC's rules require that UNE rates include a reasonable allocation of common costs, Verizon states that its local service retail rates cannot be used as a basis for any comparisons to UNE rates. *See* 47 C.F.R. § 51.505.

Additionally, Verizon states that IRCA's argument that somehow the UNE loop rate does not allow a CLEC to compete is also suspect. Verizon again notes that the issue before the Commission in this phase of the proceeding is not to set UNE rates. Verizon asserts that the question in this phase is whether ICM models loop costs in a fashion that is consistent with TELRIC principles and Commission rules. Verizon contends that if the answer to this question is "Yes," and the record overwhelmingly indicates that this is the case, the Commission must stop there. However, according to Verizon, if in Phase II of this proceeding, the Commission determines that the monthly access charge is lower than the loop cost, then IRCA should raise this rate design issue in Verizon's next rate case proceeding. Verizon asserts that the remedy

should not be to artificially lower the UNE loop rate in order to conform with a rate that is not cost-based.

With respect to Mr. Hendricks' recommendation regarding an interim UNE loop rate, Verizon again notes that the objective of this phase of the proceeding is to establish a cost model that develops cost-based rates. Verizon asserts that setting UNE rates is beyond the scope of this phase of the proceeding. Further, Verizon asserts that even if setting UNE rates were relevant, the use of such a proxy method to develop interim UNE loop rates would be inconsistent with the Telecommunications Act and the objectives of this proceeding.

On the issue of the ability to compete, Verizon states that IRCA's argument assumes that a competitor would provide rates that mirror Verizon's rate design—namely to set a fixed monthly charge along with a usage charge. Verizon asserts that there is nothing to prevent a competitor from offering a blended or fixed charge that would be competitive to Verizon's offerings. Nonetheless, Verizon's retail rate design is not an issue in this proceeding.

C. Commission Conclusion

The Commission is of the opinion that the comparison between UNE rates and the retail monthly access charges is truly an apples-to-oranges comparison. Staff and AT&T seek to set aside the actual mechanics of determining UNE rates in favor of a rate that is artificially low. The Commission refuses to do so. If Staff and IRCA have a rate design issue with respect to the retail monthly access charges, this is not to proceeding to voice their concerns.

As for the issue of interim rates, the ALJ's ruling could not be clearer. Rates are not to be set in this phase of the proceeding. As such, IRCA's proposal is rejected.

VIII.
Comparisons Of ICM With Earlier Cost Studies Disregard Differences In The Underlying Assumptions And Costing Methodologies

A. Staff

Staff witness Zolnierek compares Verizon's existing intrastate switched access rates to ICM's LRSIC plus common results. Staff witness Zolnierek testified that Verizon's proposed LRSIC plus Common cost estimates increase switched access charges by almost 17% and "…Verizon has presented no explanation for such an increase in its prefiled testimony."

Mr. Zolnierek further testifies that:

> First, in Docket 97-0601/97-0602/97-0516 (Cons.), the Commission found Verizon's switched access rates excessive and ordered Verizon to reduce these charges to LRSIC-based levels. In its decision in that proceeding the Commission noted that "…reducing access charges to LRSIC plus a reasonable allocation of joint and common costs will help level the competitive playing field in Illinois and require all carriers to compete on the basis of quality, price, innovation and efficiency. "Certainly, Verizon's submission of switched access costs that exceed Verizon's existing rates for these services is not consistent with the Commission's directive that rates should be reduced by moving to economic costing principles.

(Zolnierek Dir., Staff Ex. 2.0, p. 15, footnotes omitted).

B. AT&T

AT&T asserts that "…(i)n evaluating whether ICM should be used as a tool for estimating forward-looking economic costs, the Commission should be cognizant of the fact Verizon's ICM model estimates higher switching costs than the LRSIC studies used as the basis for the switched access tariffs filed by Verizon on May 26, 2000." (AT&T Initial Brief, p. 24; *citing* Boyles Dir., AT&T Ex. 2.0, pp. 23-24; Hegstrom Dir., AT&T Ex. 1.0, p. 8). AT&T asserts that those earlier studies were never investigated or approved by the Commission and

"likely overstate costs themselves." (*Id.*) According to AT&T, while the earlier results reflect a 1996 study, the fact is that prices for digital switching equipment are declining.

AT&T states that on a per-line basis, advances in digital technology have reduced costs dramatically and a 1999 study projected costs to decrease by 12% between 1996 and 2000. AT&T states that ICM does not reflect a downward trend in switching costs as compared to the earlier 1996 study. AT&T argues that the upward trend in costs produced by ICM suggests that the increases are a function of the model methodology itself and not due to any increase in input prices or the cost of doing business. AT&T states that, as such, ICM should be rejected as a tool for estimating such costs.

C. Verizon

Verizon states that Staff's and AT&T's comparison of Verizon's existing intrastate switched access rates to ICM's LRSIC plus common results is flawed because they are simply comparing the existing rates with ICM's cost results to draw conclusions about ICM. This comparison of ICM with earlier cost studies disregards differences in the underlying assumptions and costing methodologies. Verizon witness Tucek testified that when these differences are properly recognized, the differences in costs are seen to disappear or are substantially reduced. As such, comparisons with earlier cost studies do not establish any deficiencies in ICM and should be ignored.

Verizon notes that the current switched access rates were based on costs submitted in consolidated Docket Nos. 97-0601/0602/0516, and were effective on May 27, 2000. Order, Docket Nos. 97-0601/97-0602, 97-0516 cons. entered June 21, 2000. According to Verizon, the major difference between ICM and the methodology underlying the earlier study is that the earlier study did not include the costs that ICM identifies as "shared" costs. Accordingly, Verizon asserts that one cannot simply compare the existing rates with ICM's cost results and

draw conclusions about ICM. Verizon further asserts that in order to perform an apples-to-apples comparison, the costs that ICM identifies as "shared" must be excluded and the Commission-ordered 28.86% allocation of shared and common costs that is contained in the existing rates must be removed. The results of these adjustments are described as follows by Verizon witness Dye:

> … overall, the costs filed in this case are actually slightly lower than the comparable costs upon which our current rates are based. The switching costs have declined by about four percent, while those in the transport category have increased by three percent. Consequently, Mr. Zolnierek's own analysis, when properly developed, shows that the costs produced by ICM are reasonably comparable to the costs previously relied upon. Further, the overall LRSIC plus Common cost estimates presented by Verizon in this case are higher than the overall current rates only because the current rates were established using a shared and common cost contribution factor which was not based on Verizon's costs.

(Dye Reb., Verizon Ex. 5, p. 4).

Verizon states that the apparent increase in costs between ICM and previous cost studies is due to three factors: (1) direct assignment of costs previously treated as shared; (2) differences in the composition of the network due to the sale of wire centers to Citizens; and (3) exclusion of circuit equipment from the loop costs underlying the existing rates. Verizon asserts that both Mr. Hendricks' and Mr. Zolnierek's analyses are flawed because they fail to recognize these differences in the costing methodology underlying the currently effective rates and ICM. According to Verizon, the record demonstrates that when these factors are considered and adjusted for, ICM produces a LRSIC that is *1.6% below* that produced by the earlier cost study.

Finally, Verizon asserts that AT&T's statement that switching costs are declining is not accurate. Verizon notes that AT&T is basing its statement on a study that is almost four years old, and the source of this data is older—it was taken from a database compiled by Northern Business Information in January, 1997. Verizon states that this study precedes the "outdated"

vendor quotes and contract prices by more than a year and it says nothing specific about the prices that Verizon faces.

D. Commission Conclusion

The Commission is of the opinion that the comparisons of AT&T and Staff are not relevant. One cannot compare Verizon's existing intrastate switched access rates to ICM's LRSIC plus common results to draw conclusions about ICM. The Commission agrees with Verizon that this comparison disregards differences in the underlying assumptions and costing methodologies.

Verizon adequately explained the differences between ICM and earlier cost study results—namely the direct assignment of costs previously treated as shared; the differences in the composition of the network due to the sale of wire centers to Citizens; and the exclusion of circuit equipment from the loop costs underlying the existing rates. No party disputed that these differences exist. As such, the comparison of AT&T and Staff are irrelevant.

IX.
Use Of Existing Interstate Access Rates As A Gauge Of Verizon's Switched Access Costs Is Improper

A. Staff And AT&T

Staff and AT&T also attempt to use existing interstate access rates as a gauge of Verizon's switched access costs. Mr. Zolnierek testified as follows:

> In almost every instance the intrastate switched access services presented in Direct Attachment TD-5 have identical companion services on the interstate level. Typically the only difference between such services is whether, once Verizon hands a call off to a long distance carrier, the long distance carrier transports the call to a location within Illinois or one outside of Illinois (or conversely whether a call handed to Verizon by a long distance carrier originates within Illinois or outside of Illinois). That is, in virtually all cases the actual functions being performed by Verizon's network in order to provide intrastate access service are identical to the functions performed by Verizon's network to provide interstate

> access services. Therefore, the forward-looking costs of providing intrastate switched access services should logically to be very similar to those of providing interstate switched access services.

(Zolnierek Dir., Staff Ex. 2.0, p. 6).

B. Verizon

Verizon asserts that its interstate rates have nothing to do with Verizon's LRSICs in Illinois. Verizon states that the current interstate rates are not cost-based, but instead were established as the result of the FCC's CALLS Order. According to Verizon, the CALLS Order was an integrated, negotiated agreement among various groups within the industry, consumer groups, and the FCC. As such, Verizon asserts that the federal interstate rates that are a result of this Order contain many tradeoffs that were specific to the context of CALLS. Verizon further asserts that this settlement was part of a broader agreement which also set higher SLCs, established a new universal fund, and implemented several other items. Accordingly, Verizon asserts that parties' attempts to isolate one piece of CALLs out of context is totally improper.

C. Commission Conclusion

The Commission agrees with Verizon that its interstate rates have nothing to do with Verizon's LRSICs in Illinois. The record demonstrates that the current interstate rates are not cost-based, but instead were established as the result of a settlement incorporated in the FCC's CALLS Order. Accordingly, the federal interstate rates that are a result of this Order contain many tradeoffs that were specific to the context of CALLS. As such, these rates are not relevant to this proceeding.

X.
Switching Costs

A. Standards

1. Verizon

Verizon notes that ICM does not have decision-making capability with respect to switch type placement. Switch type placement is an input to the model. As such, Verizon maintains that rejection of an input to ICM, whether it relates to switch models or switch costs, does not warrant a rejection of ICM as a whole.

Verizon asserts that the inputs and assumptions incorporated into ICM are reasonable and accurate. As such, Verizon asserts that ICM produces accurate estimates of Verizon's forward-looking switching costs in Illinois. According to Verizon, switching costs produced by ICM are based on the host/remote relationships and technology mix found in Verizon's Illinois network, and on the switch prices that the Company is able to obtain today and for the foreseeable future. In addition, Verizon states that costs are based on input prices for material and labor that Verizon, as an efficient buyer with a national presence, is able to obtain. Verizon further states that the material costs input to ICM are based on Verizon's actual contracts with vendors, and the labor costs are based on Verizon's experience of what labor activities actually cost in Illinois.

With respect to Part 791.20(c) in particular, Verizon contends that ICM calculates costs as if the service were being provided for the first time. Verizon maintains that the model reflects the forward-looking switches and the existing host/remote relationships because there are no planned adjustments to these characteristics of Verizon's Illinois network. Verizon notes that the local loop network is hypothetical because of the FCC's TELRIC requirements and because of the current state of modeling technology. Verizon asserts that ICM's modeled network

investment is not based on the historical prices paid for plant and equipment, but is instead based on current prices and costs that were reasonably estimated based on the available data.

Verizon further asserts that ICM does not include historical or embedded costs in its output. Verizon states that the 1999 ARMIS data have been adjusted to make it forward-looking. Further, Verizon asserts that the adjusted operating expenses are used as the numerator in expense-to-investment ratios that are applied to the forward-looking investments modeled by ICM on a per-unit basis. According to Verizon, there are no historical or embedded costs recovered through these ratios.

As presented, Verizon states that ICM models switching costs based on the switches that it purchases from its three primary vendors: Lucent's 5ESS, Nortel's DMS-10 and DMS-100, and AGCS's GTD-5. Further, Verizon notes that ICM models the host and remote switches in a consistent fashion. For example, if the host is a DMS-100, then any remote switches are DMS-100 remote units. Additionally, Verizon states that the DLCs used by ICM reflect the line sizes and vendor choices actually used by Verizon in making additions to its real-world network. Verizon further states that ICM's transport network is based on existing tandem locations, with offices clustered together on SONET rings based on their distance from the tandems. Verizon contends that in instances where only two nodes are involved, such as a host/remote link or tandem serving a single Verizon switch, ICM models a point-to-point connection. According to Verizon, the SS7 network modeled by ICM is based on the actual locations of the Service Control Points and Signal Transfer Points within Verizon's nationwide SS7 network.

Verizon further asserts that it is important that the Company's cost studies be based on the input prices for material, equipment and labor that Verizon expects to pay. According to Verizon, this is because unless the input prices correspond to what Verizon expects to pay, there

is no reasonable expectation that the resulting cost estimates will reflect the forward-looking costs Verizon expects to incur in provisioning telecommunication services and UNEs. Verizon states that in particular, the discount factor used to estimate switching costs must reflect a blend of that realized for modernization purchases and for growth purchases.

Indeed, Verizon states that the material prices used in ICM reflect Verizon's expectations based upon current experience. Verizon notes that its ability to purchase materials and equipment on a nationwide basis results in economies of scale associated with buying in quantity. Verizon asserts that switch prices are based on Verizon's contracts with switch vendors, and include loadings for vendor and Verizon engineering and installation costs, supply expense, and costs of acceptance testing. Additionally, Verizon states that the loading factors are applied to the material costs to reflect the cost of power and test equipment. Verizon further states that the material prices are used as inputs to SCIS, which is used to produce the required investments for ports, call origination and termination, usage and switch features. SCIS is a product of Telcordia Technologies and is used to assign the costs of switch components on the basis of how the component is engineered. ICM uses the output from SCIS to determine the costs of the Nortel and Lucent switches. Another program, CostMod, is used to determine the costs of the GTD-5. Both of these programs base the costs on the usage characteristics of each switch in Verizon's Illinois network.

Verizon maintains that ICM generally understates Verizon's forward-looking switching costs. According to Verizon, one of the reasons for this is the fact that ICM places a heavier weighting on initial switch pricing. Verizon states that because Verizon's network in Illinois is already 100% digital, any new switch purchases will likely be limited to remotes. Because

switching additions are more expensive relative to initial switch purchases, ICM's resulting cost estimates are understated.

Further, Verizon states that it does not expect to replace the GTD-5 switches in the real world. No party disputed this fact. Verizon states that suggestions that Verizon is moving away from the GTD-5 has no basis in reality. Verizon notes that it continues to purchase GTD-5 remotes in other states, and will purchase them in Illinois if circumstances require it. Verizon states that the fact that it no longer purchases GTD-5 host switches merely reflects the fact that Verizon's network is 100% digital in those states where the GTD-5 is deployed.

Verizon asserts that no efficient carrier would ever replace all of its switches at once simply because of changes in relative prices among vendors, nor would they price switching services under such an assumption. If anything, Verizon asserts that an efficient carrier would base switching rates on the costs of additions to its existing network, except in those circumstances where concrete plans existed to replace a specific switch.

Verizon further states that an efficient carrier will not replace existing switches with another vendor just because the relative prices among vendors have changed. According to Verizon, if this were indeed an efficient practice, we would see firms in other industries engaging in similar behavior. Verizon gives the following analogy as an example:

> For example, we would see airlines switching their entire fleet back and forth between Boeing and Airbus, depending on which manufacturer offered the lowest price for a single plane. As I stated in my rebuttal testimony, Mr. Boyles' proposal to model costs on the basis of the minimum so-called target cost per line is flawed simply because Verizon is not going to replace the switches in its wire centers.

(Tucek Sur., Verizon Ex. 3.0, p. 58).

Verizon notes that the Florida Commission found, "there needs to be a basis in reality if the costs developed for the network are to have any relevance to the cost of basic local telephone

service." (Order, Docket No. 98-0696TP; p. 129; January 7, 1999). Mr. Boyles' proposal for switching costs is demonstrably wrong because it has no basis in reality.

2. Staff

Staff asserts that Verizon's switched access rates are inconsistent with the Commission's Part 791 rules. ("Part 791"). Staff makes three arguments in this regard.

First, Staff states that the definition of long run employed Verizon, and incorporated into Verizon's model methodology, does not assume that all inputs are variable. Instead Staff asserts, Verizon's model methodology assumes that Verizon's existing switch technology is sunk or embedded, and cannot be altered. As such, Staff asserts that Verizon's model methodology does not comply with the requirements of Part 791.20(b) of the Commission's rules.

Second, Staff states that the model does not attempt to make any internal analysis as to what would be the least cost way of placing transport along with the feeder. Further, Staff asserts that the model does any analysis to determine which switch technology would be the most cost efficient at each location. Staff cites Mr. Tucek's cross-examination on this issues:

> … I said that the model does not have the decision rule programmed into it. You could deal with the inputs, and I explained why that would be incorrect to do so.

(Tr. at 39.)

Third, Staff asserts that Section 791.60 of the Commission's cost rules require Verizon to "provide the demand figures and/or forecast(s) used in the LRSIC computations and an explanation detailing the explicit and implicit assumptions and methods used to derive the figures and/or forecast(s)." Staff cites that rebuttal testimony of Staff witness Dr. James Zolnierek:

> The ICM draws on average investments contained in ILSWINVW.DB in order to produce switched access costs. In order to verify that the unit investments contained in

> ILSWINVW.DB accurately reflect switch costs, I have attempted to simply sum the categorical investments contained in ILSWINVW.DB for each switch in order to compare them to the total material investment that Verizon provides for each switch. That is, I have attempted to ensure that the sum of the various switching investment components does not exceed the total. To date, I, and presumably the Company, have been unable to complete this exercise due to the difficulties associated with evaluation of the company's models and the estimates they produce.

(Zolnierek Reb., Staff Ex. 2.1, pp. 15-16).

Staff asserts that Verizon failed to supply the demand figures used in its computations that would make known and verifiable the total investment that Verizon inputs into the ICM. Staff states that these deficiencies cannot be reconciled with Section 791.60 of the Commission's cost rules. Staff states that it repeatedly tried to elicit this data from the company. Staff states that Dr. Zolnierek noted that "…it is unclear what units are based on Verizon's own provision of service in Illinois and what units are based on vendor usage estimates, Verizon nationwide usage estimates, or other sources." (*See* Zolnierek Reb., Staff Ex. 2.1, pp. 14-18). Staff asserts that the Company did not provide an explanation detailing the explicit and implicit assumptions and methods used to derive the switch investment demand figures.

Staff also asserts that Mr. Tucek's assertion that the company models its existing switches types because it does not plan to replace them is inconsistent with Verizon's approach to its outside plant modeling. Staff notes that Verizon has elected to model an outside plant network it has no intention of deploying, while at the same time contending that it need not model current least cost switching technology because it will not replace its existing switches.

Staff also asserts that Dr. Zolnierek referred to a data request that sought Verizon's explanation of, "[h]ow … Verizon [has] incorporated cost reductions consistent with such new technologies [new SS7 bypass devices] into its cost estimates[.]" (Zolnierek Dir., Staff Ex. 2.0,

p. 23). In its response, Staff states that Verizon made it clear that it does not consider technologies that it does not plan to deploy, regardless of whether such technologies are the least cost technology available—the very technologies Verizon is required to model pursuant to Section 791.20(c) of the Commission's cost rules.

According to Staff, Verizon ignores possible cost savings associated with deploying those switches it does use. Staff states that by the company's own admission, it has not even attempted to determine the least cost mix of the switches it currently purchases that would represent the least cost technology available. Staff criticizes the analogy that Mr. Tucek draws between this practice and airlines' selection of aircraft. Staff states that this example is flawed because Verizon's LRSIC cost estimates are required to be forward looking, which Part 791.20 of the Commission's rules establish "shall be calculated as if the service were being provide for the first time and shall reflect planned adjustments in the firm's plant and equipment." 83 Ill. Admin. Code 791.20. Staff states that is aware of no similar requirement in the airline industry. According to Staff, while American Airlines and Southwest do not change out their fleet when relative prices of airplanes change, they presumably consider prices when they initially priced service, and continue to do so as they add additional aircraft to their fleets.

Staff also states that Verizon's decision to evaluate its past switching purchases at current prices inflates its cost estimates over the estimates that Verizon would produce if it were to model a mix of switches based on current switch prices. Staff contends that its current prices will not reflect past discounts or price differences and thus will not even accurately reflect embedded costs. Staff states that Verizon did not attempt to use historical prices as switching inputs; rather, it used current estimates. Staff acknowledges that Verizon attempted to increase

the estimates beyond current replacement costs but, nonetheless, estimated the cost of all of its existing switches at current prices.

Staff disagrees with Verizon's assertions that the FCC indicated that the standard of rebuilding the network assumes "the wire center is in place" and that "this standard is intended to reflect the cost the ILECs expect to incur." Staff states that Verizon's model methodology does not reflect the cost that Verizon expects to incur or that it has incurred.

Staff disputes Mr. Tucek's statement that:

> [T]he forward-looking pricing methodology for interconnection and unbundled network elements should be based on costs that assume that wire centers will be placed at the incumbent LEC's current wire center locations, but that the reconstructed network will employ the most efficient technology for reasonable foreseeable capacity requirements.

(Tucek Reb., Verizon Ex. 2.0, pp. 18-19). Staff asserts that while Verizon has adopted existing wire center locations, it has not utilized the most efficient technology available.

In sum, Staff asserts that Verizon has chosen to use current prices and its embedded switch choices. Staff asserts that by failing to consider replacement of its switches with alternative mixes of switches, mixes that are efficient give the switch prices Verizon uses in the model, Verizon has merely produced inflated replacement cost estimates.

3. AT&T

AT&T asserts that ICM neither conforms to accepted LRSIC and TELRIC costing principles nor can it be readily adjusted to properly reflect those principles. AT&T states that Verizon's approach models an inefficient, high-cost network. AT&T states that with respect to switching costs, Verizon's study models a network configuration that consists of the same switching technology deployed at each switch location as is currently deployed in Verizon's Illinois network even where selecting a more efficient choice in switching technology for a

particular location would reduce costs. AT&T asserts that at the same time, ICM models loop facilities based upon a hypothetical network configuration that inefficiently deploys digital loop carriers and thereby drives up outside plant costs.

AT&T contends that Part 791 explicitly addresses the issue of efficient versus actual costs, stating:

> Forward-looking costs are the costs to be incurred by a carrier in the provision of a service. These costs shall be calculated as if the service were being provided for the first time and shall reflect planned adjustments in the firm's plant and equipment. *Forward-looking costs ignore embedded or historical costs; rather, they are based on the least cost technology currently available* whose cost can be reasonably estimated based on available data.

83 Ill. Admin. Code, Part 791, Cost of Service, Section 791.20 (c) (*emphasis* added).

AT&T asserts that a LRSIC study clearly must assume that the service is being provided for the first time and ignore embedded or historical costs in favor of the least cost technology currently available provided the costs can be reasonably estimated based upon available data. AT&T asserts that this approach is consistent with starting point for a cost study under the TELRIC methodology. AT&T states that the FCC has by rule identified the network configuration that is to be modeled:

> Efficient Network Configuration. The total element long run incremental cost of an element should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration given the existing location of the incumbent LEC's wire centers.

47 C.F.R. § 51.505(b)(1).

AT&T states that in the FCC's Local Competition Order, the FCC noted that some advocates suggested that costs should be computed based upon a least cost, most efficient network configuration and technology currently available without regard for the LEC's existing network whatsoever and others advocated that forward-looking costs should be computed based

on incumbent LECs' existing network infrastructures, taking into account changes in depreciation and inflation. *Local Competition Order* ¶ 684. According to AT&T, the FCC rejected both suggestions and determined that a third approach was more appropriate. AT&T states that costs are to be developed by using a network configuration that assumes the LEC's existing wire center locations will be used but assumes a reconstructed network using the most efficient technology available to serve the reasonably foreseeable capacity requirements. Id. ¶¶ 685, 690.

AT&T further states that the United States Supreme Court affirmed the methodology in *Verizon Communications v FCC,* 122 S. Ct. 1646; 152 L. Ed. 2d 701; 2002 U.S. LEXIS 3559 (2002) and specifically noted that the most important aspect of TELRIC is that it is based upon the use of the most efficient technology available and the lowest cost network configuration:

> In Rule 505, the FCC defined the "forward-looking economic cost of an element [as] the sum of (1) the total element long-run incremental cost of the element [TELRIC]; [and] (2) a reasonable allocation of forward-looking common costs," § 51.505(a), common costs being "costs incurred in providing a group of elements that "cannot be attributed directly to individual elements," § 51.505(c)(1). *Most important of all, the FCC decided that the TELRIC "should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent's wire centers*." § 51.505(b)(1).

Verizon, supra, 122 S. Ct. at 1664; 152 L. Ed. 2d at 728.

According to AT&T, the Supreme Court recognized that under this standard, there is no requirement that the type of technology assumed for costing purposes actually be deployed in the incumbent LEC's network or that there be any plan by the incumbent to ultimately deploy such technology. AT&T states that the Court expressly rejected the notion that the TELRIC methodology is improper because it is calculated by reference to a "hypothetical" network instead of the incumbent's "actual" network:

> The incumbents' alternative argument is that even without a stern anchor in calculating "the cost ... of providing the ... network element," the particular forward-looking methodology the FCC chose is neither consistent with the plain language of § 252(d)(1) nor within the zone of reasonable interpretation subject to deference under *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 843-845, 81 L. Ed. 2d 694, 104 S. Ct. 2778 (1984).* This is so, they say, because TELRIC calculates the forward-looking cost by reference to a hypothetical, most efficient element at existing wire-centers, not the actual network element being provided.
>
> The short answer to the objection that TELRIC violates plain language is much the same as the answer to the previous plain-language argument, *for what the incumbents call the "hypothetical" element is simply the element valued in terms of a piece of equipment an incumbent may not own.* This claim, like the one just considered, is that plain language bars a definition of "cost" untethered to historical investment, and as explained already, the term "cost" is simply too protean to support the incumbents' argument.

Verizon v. FCC, 122 S.Ct. at 1667; 152 L. Ed. 2d at 731 (*emphasis* added)

According AT&T, the Court stated that TELRIC does not calculate valuation based on the actual technology deployed in the incumbent's network precisely because the use of embedded costs as a basis for determining rates in traditional ratemaking proceedings encouraged utilities to employ accounting methods that led to inflated book values. *Id.* at 1676; 152 L. Ed. 2d at 741. AT&T asserts that the Court stated that TELRIC seeks to "avoid this problem by basing its valuation on the market price for *most efficient* elements." *Id*. AT&T asserts that if one is doing a TELRIC study of the switching element, the point of the study should be to assign a value for that element based upon the most efficient technology available irrespective of what pieces of equipment the incumbent currently has deployed in its network or plans to deploy.

AT&T states that the Supreme Court also addressed a second reason for the FCC's decision to reject the use of the existing network as the basis for determining costs:

> [T]he problem with a method that relies in any part on historical cost, *the cost the incumbents say they actually incur in leasing network elements*, is that it will pass on to lessees the difference between most-efficient cost and embedded cost. See First Report and Order P705. Any such cost difference is an inefficiency, whether caused by poor management resulting in higher operating costs or poor investment strategies that have inflated capital and depreciation. If leased elements were priced according to embedded costs, the incumbents could pass these inefficiencies to competitors in need of their wholesale elements, and to that extent defeat the competitive purpose of forcing efficient choices on all carriers whether incumbents or entrants. The upshot would be higher retail prices consumers would have to pay. *Id.*, PP655 and 705.

Verizon v. FCC, 122 S. Ct. at 1673; 152 L.Ed.2d at 737, 738

AT&T states that the Commission also discussed the issue as follows:

> The FCC firmly rejected arguments that the prices must or should include any difference between the embedded costs LECs have incurred and the economic costs of those elements and services, concluding that forward-looking economic cost-based prices would best ensure the efficient investment decisions and competitive entry contemplated by the Act. We agree. To include residual in UNE prices is completely antithetical to competition because competitors would be forced to pay more than the economic costs of the elements they purchase, thereby discouraging competitors as efficient as or even more efficient than the incumbent LEC from entering the market. None of the varied arguments offered in support of the residual increment proposals are persuasive.

Second Interim Order, Docket Nos. 96-0486/0569 (Consol.), p. 70 (February 17, 1998).

AT&T states that Verizon's cost study does not conform to the requirement that the technology chosen reflect the most efficient technology currently available irrespective of what is currently deployed or planned for the network, and that costs be determined on the basis of a network configuration that is the least cost, given using the existing wire center locations. AT&T states that Verizon witness Tucek acknowledged that rather than assuming the most efficient technology available and the least cost network configuration, ICM used the switches currently in place at each wire center location in Verizon's existing network.

AT&T further states that ICM does not have the capacity to assess what combination or combinations of technology choices will produce the overall lowest cost network configuration. AT&T states that on cross-examination of Mr. Tucek he stated that ICM does not have this decision making ability.

AT&T further asserts that ICM does not attempt to determine switching costs based upon use of the most efficient technology currently available and the lowest cost network configuration, given the existing wire center locations. AT&T states that aside from the ICM model itself, Verizon made no effort to ascertain whether using another switch or another switch vendor or a combination of currently available products would produce an overall lower cost. Tr. at 45. As such, AT&T asserts that the network configuration that Verizon has modeled does not meet the mandates of 47 CFR § 51.503(b)(1).

Additionally, AT&T asserts that nowhere has the FCC suggested that application of forward-looking costing principles depends on whether the incumbent intends to replace the technology currently deployed in the network. To the contrary, AT&T asserts that the FCC expressly rejected the use of the "existing network design and technology that is currently in operation" to develop forward-looking costs, concluding that this "is essentially an embedded cost methodology." Local Competition Order ¶ 684.

4. Reply

[to be completed by the Administrative Law Judge]

5. Commission Conclusion

The record demonstrates that the switching costs produced by ICM are based on the host/remote relationships and technology mix found in Verizon's Illinois network, and on the switch prices that the Company is able to obtain today and for the foreseeable future. This is entirely reasonable and consistent with the standards of the Commission and the FCC.

The Commission is further of the opinion that ICM properly reflects the forward-looking switches and the existing host/remote relationships because there are no planned adjustments to these characteristics of Verizon's Illinois network. Moreover, it is unreasonable to model switching costs under the assumption of an across-the-board change in switch types, since there is no reason to believe that the inputs for switching costs adequately reflect the prices that could be obtained under such a replacement. Indeed, there is every reason to believe the switch manufacturers could not readily produce the required number of switches. The Commission agrees that comparisons of the existing to the local loop network to the modeled network are not applicable because the latter is hypothetical because of the FCC's TELRIC requirements and because of the current state of modeling technology. As stated previously, the focus of IRCA and Staff on the existing local loop network is misplaced.

Arguments that ICM's modeled network investment is based on the historical prices paid for plant and equipment are inconsistent with the record. Verizon has overwhelmingly established that this investment is instead based on current prices and costs that were reasonably estimated based on the available data.

With respect to switch placement, the Commission is of the opinion that this is an input issue. As such, a disagreement over switch placement does not warrant a rejection of ICM. Nonetheless, as presented, ICM's modeling of switching costs and switch placement is reasonable. The switches placed are reasonable and forward-looking. Not one credible criticism exists in the record with respect to the functionality of these switches. Each of the modeled switches is still produced and is fully supported by their manufacturers.

As for switch pricing, Verizon has done a commendable job of estimating these costs. AT&T and Staff proceed under the fallacy that every switch in the network can be replaced by

the same manufacturer at the same time—at the same price. It is simply unreasonable to assume that the lowest price available for a product that is no longer manufactured in high quantities can be used across the board to model an entire network. The Commission completely agrees with Verizon that since the entire nation is almost 100% digital, such an approach is unreasonable and modeling must take this fact into account.

The Commission also agrees that ICM generally understates Verizon's forward-looking switching costs. The Commission agrees that ICM places a heavier weighting on initial switch pricing. Because Verizon's network in Illinois is already 100% digital, any new switch purchases will likely be limited to remotes. Because switching additions are more expensive relative to initial switch purchases, ICM's resulting cost estimates are understated.

B. Usage Sensitive

1. Verizon

Verizon asserts that except for line termination, switching costs are usage-sensitive and need to be modeled as such. Verizon states that it has chosen to model these costs correctly, using the best available modeling technology. Verizon further states that the positions of Staff and AT&T that switching costs are not usage sensitive is in direct opposition to earlier findings of the Commission. According to Verizon, the suggestion that a CLEC should be charged on a per-line basis for a port and all of the associated usage is based on reasoning that is fundamentally flawed. Verizon states that if switching costs were not indeed usage-sensitive, then local service should be charged on a flat-rate basis instead of on a measured basis.

Verizon asserts that Staff and AT&T essentially misunderstand the fundamental nature of switching. Verizon states that the well-established constraints on the capacity of a digital switch:

- the number of line and trunk terminations;
- the amount of traffic offered by the terminations; and

- the processor call rate.[5]

(Tucek Sur., Verizon Ex. 3.0, p. 11).

Verizon explains that a review of typical digital switch architecture indicates that the capacity of a switch depends on more than just the number of lines. Verizon witness Tucek provides an illustration of the architecture of a digital switch in his Surrebuttal Attachment DGT-2. Mr. Tucek testifies that a given switch can be engineered with the quantities and sizes of the components needed to serve a given number of lines and trunks based on the offered load.

Verizon witness Tucek testifies:

> …the number of LCMs are determined by the number of analog lines terminated at the main distribution frame, and by the maximum capacity of the specific vendor's line module. However, the LCMs also provide a concentrating function inasmuch that more analog lines are served by a module than there are paths into the switch. For example, the line module for a given switch may have enough slots for 640 analog POTS lines, but have less than 100 paths available for these lines to communicate with the rest of the switch. The reason for this is that all of the lines served by a given line module will not go off-hook at once. Consequently, if the offered load per line is high enough, the number of lines assigned to a line module may be less than the maximum allowed. The number of LGCs is determined by the number of LCMs, and by the offered load for the analog lines served. The number of SCMs, DTCs and TMs depends on the number of trunks terminating at the switch, whether the far end of the trunk is another switch or a remote terminal. The number of trunks is in turn determined by the offered load, the percent of traffic that is intra-office, and on the amount of concentration in remote terminals.[6] The LGCs, SCMs, DTCs, TMs and the switching fabric are all constrained by the amount of usage that flows through them. The size of the CP depends on the amount of traffic flowing through the switch and on the amount of feature activation. Except for the maintenance control equipment, the peripheral equipment is also dependent on traffic volumes.

(Tucek Sur., Verizon Ex. 3.0, p. 13).

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[5] *Fundamentals of Digital Switching*, McDonald, John C., editor, Plenum Press, New York, 1983, pp. 321-322.

[6] See Verizon's Response to Staff Data Request JZ 1.1, attached to the Surrebuttal Testimony of David Tucek,

According to Verizon, the focus should not be focused narrowly on whether switches are line or processor-constrained because this ignores everything in the switch between the line modules and the central processor. Verizon asserts that the assignment of SCIS "getting started" investment to the port overlooks the fact that most of the components of a digital switch are usage-sensitive. As Verizon witness Tucek testified, "(i)t is much more consistent with the principle of cost-causation to assign only the getting-started costs associated with line terminations to the port, and to leave the rest assigned to call setup." (Tucek Sur., Verizon Ex. 3.0, p. 14).

Additionally, Verizon asserts that switches are not purchased on a per-line basis. Verizon states that unbundled access to its switches should not be offered on a per-line basis and all of the features and switching cannot be included in a flat-rate port charge. According to Verizon, to do so would effectively price the switching and features at zero on the margin to the CLECs. Verizon witness Tucek testified that:

> It is reasonable to assume that CLECs purchasing such ports will offer switching and features at low or zero cost to end users in order to differentiate their services. The success of the CLECs' marketing efforts will consequently determine the actual demand on the switch processor and other usage-sensitive switch resources—if it increases enough, it may well be that a larger processor must be installed or that additions to the switching fabric or controllers will have to be made. To claim that switching costs are not usage-sensitive on the basis of Mr. Zolnierek's review of vendor quotes and contracts ignores the fact that in the real world, switches are engineered on the basis of the offered load.

(Tucek Sur., Verizon Ex. 3.0, p. 15).

Verizon further states that the evidence in the record overwhelmingly demonstrates that switching costs are not incurred on a per-line basis. Verizon asserts that its cost study filing and

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Verizon Ex. 3.0, Att. DGT-5.

the response to Staff data request JZ 6.1 provide details of why this is true.[7] Verizon asserts that, for example, the worksheets corresponding to the quote requests for the Lucent model offices require such usage-related inputs as the originating and terminating CCS per line,[8] the percent of intra-office traffic, the line-concentration ratio, and the number of trunks.[9] Also included in the response to JZ 6.1 is a copy of Verizon's engineering procedure that documents application of the Service Ready II ("SRII") contract with Nortel. According to Verizon, the procedure makes it clear that the model office configurations covered by the contract are based on fixed number of trunks per line consistent with a specified CCS per line. Verizon states that the procedure also allows for the specification of non-SRII trunks, equipment and software. Additionally, Verizon asserts that the portion of the response to JZ 6.1 dealing with the GTD-5's shows the breakdown of the underlying components for each modeled switch. Except for the line modules, all of these components are sized based on the number of required trunks and on the offered load.[10]

Verizon further asserts that SCIS and CostMod have been approved by other state commissions for both Verizon and for other companies. Verizon witness Tucek provides a partial list of dockets in which costs based on SCIS have been approved in various states for Verizon, Sprint and BellSouth. Verizon notes that the two Verizon dockets in Michigan and North Carolina also included costs developed with CostMod.

Additionally, in FCC Docket No. 92-91, SCIS was subjected to an independent audit conducted by Arthur Andersen. In its report, Arthur Andersen reached the following conclusions:

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[7] Tucek Sur., Verizon Ex. 3.0, in the PDF file containing the confidential version of this exhibit, the page numbers for the items discussed below are: 6, 16, 25, 36, 46, 56, 66, 84, 101, 109, 111, 113,114, 142, 165, 205, 215, 219, and 222-229.

[8] CCS (hundred call seconds) is a measure of the load offered to a switching system. For example, five one-minute calls equals 3 CCS (5 calls x 60 seconds = 300 call seconds = 3 CCS).

[9] See Tucek Sur., Verizon Ex. 3.0, pp. 6, 16, 25, 36, 46, 56, 66, 84, 205 and 215 IN THE PDF.

- The costing principles inherent in SCIS are appropriate for estimating long run incremental investments attributable to switching system usage, and the specific methods for implementing these principles are reasonable.

- SCIS accurately estimates the cost of actual switching systems engineered according to manufacturer engineering rules as evidenced by Bellcore's validation procedures and results.

- Extensive software development controls and testing are used to assure SCIS models are properly implemented and installed by model users.

- Finally, although SCIS is a complex model requiring considerable understanding of switching systems and service costing, the model documentation, training and technical support are adequate to provide reasonable support for the model in use.

(Tucek Sur., Verizon Ex. 3.0, p. 18, citing Arthur Andersen, *Independent Review of SCIS /SCM Report*, July, 1992, p. 7).

Verizon states that SCIS and CostMod estimate switching costs based on the manner in which digital switches are designed. As such, Verizon states that the Commission should accept their use in the development of Verizon's costs for unbundled switching and switched access. Verizon states that the unit costs produced by SCIS and CostMod are the best available estimates of Verizon's forward-looking switching costs because their assignment of costs between termination and usage reflects how switches are actually engineered, and because the line, trunk and usage inputs are based on Verizon's actual network in Illinois.

Finally, Verizon asserts that the switching cost estimates produced by ICM represent a lower bound on Verizon's forward-looking, economic costs. Verizon states that this is because 365 average business days is assumed, and because the switch costs are heavily weighted towards the pricing for initial switch placements rather than switch additions.

[10] See Tucek Sur., Verizon Ex. 3.0, pp. 219 and 222-229 IN THE PDF.

2. Staff

Staff acknowledges that determining how to properly define what costs are incurred on a per line, per minute of use, or other basis, when such factors share common inputs, is admittedly a conceptually difficult exercise. Staff, however, states that improper allocation can lead to gross errors in cost estimates. Staff states that costs that Verizon incurs on a per line basis will, in the absence of line growth, remain constant. Staff further states that if Verizon estimates these costs as per minute of use costs, then, even in the absence of line growth and any increase in *actual* forward looking costs, total cost *estimates* will increase over time if usage per line increases.

Staff states that nationwide, the average number of minutes per loop is increasing over time, at a rate of approximately 10% per year. *See* FCC, Trends in Telephone Service, May 2002, Table 11.2. Thus, Staff asserts that allocation errors of this nature can inflate costs by as much as 10% per year, and even more when compounding effects are considered. Such errors in allocation are clearly significant.

Staff disagrees with Verizon's estimation of central processor costs as per minute of use costs under the theory that "[t]he size of the CP depends on the amount of traffic flowing through the switch and on the amount of feature activation." (Tucek Sur., Verizon Ex. 3.0, p. 13). Staff, however, asserts that on cross-examination Mr. Tucek stated that Verizon's digital switching capacity is not, except in unusual circumstances constrained by the capacity of the central processor.

Staff asserts that Mr. Tucek's statement confirms that the number of minutes flowing through Verizon's switches can increase without necessitating installation of a larger processor. Staff states that Verizon's central processor costs do not, except when demand increases are extreme, increase as minutes of use flowing through the switch increase. However, Staff asserts that because Verizon includes processor costs in its per minute of use estimates, Verizon's total

estimates of processor costs will increase with each additional minute of use, despite the fact that Verizon's total processor costs do not increase with each additional minute of use passing through the switch.

Staff also refers to Mr. Tucek's testimony that:

> Including all of the features and switching in a flat-rate port charge effectively prices the switching and features at zero on the margin to the CLECs. It is reasonable to assume that CLECs purchasing such ports will offer switching features at low or zero cost to end users in order to differentiate their services. The success of the CLECs' marketing efforts will consequently determine the actual demand on the switch processor and other usage sensitive switch resources – if it increases enough, it may be that a larger processor must be installed or that additions to the switching fabric or controllers will have to be made.

(Staff Initial Brief, p. 8, *citing* Tucek Sur., Verizon Ex. 3.0, p. 15).

Staff asserts that Mr. Tucek is testifying that Verizon's costs do not increase as more minutes of use pass through the switch, except when minutes of use increase "enough," however much that might be.

Staff also asserts that during cross-examination Mr. Tucek was queried regarding right to use fees ("RTU"), fees that are included as inputs into Verizon's switch cost estimates, as follows:

> Q. Is this standard set of features for any particular switch, when you pay the right to use fee, does that give you the right to use those features in that switch; in other words, provide the end users with call forwarding or whatever the standard set might be?
>
> A. Yes.
>
> Q. And that's a fixed price, is that correct, as part of the switch cost?
>
> A. For the right to use fee, yes, but that's not the only cost included in the features.

(Tr. at 72).

Staff states that Mr. Tucek again testified that RTU fees are incurred by Verizon on a flat rated basis and do not vary with usage. Staff, however, states that the RTU fees are included in Verizon's per minute of use costs estimates. According to Staff, every increase in minutes of use passing through the switch will increase the total right to use fee cost estimate produced by Verizon, despite the fact that the right to use fees are fixed. Staff asserts that Verizon pays a flat rate, and seeks to collect on a usage-sensitive basis.

Staff further asserts that the methodology used by Verizon to estimate its switching costs assumes that switching costs rise with every increase in minutes of use passing through Verizon's switches—that is every additional minute that passes through the switch raises Verizon's switch costs. Staff asserts that this is not true and an illustration of this comes from examination of the manner in which Verizon determines the allocation of costs between per minute of use and per line factors.

Staff contends that a review of the price quotes taken into account by Verizon indicates that prices do not vary according the minutes of use flowing through the switches.. Staff witness Dr. Zolnierek testified that:

> Verizon has provided Vendor quotes that indicate that its switch costs are incurred based on line size and switch technology. Based on these vendor quotes, these are the only variables that determine the prices Verizon pays for switches. That is, Verizon's vendor quotes list a single price for DMS-100 with 60,000 lines.

(Zolnierek Reb., Staff Ex. 2.1, p. 23).

Staff acknowledges Verizon's point that the certain of the vendor quotes depend on other factors such as number of host-remote links and trunks. However, Staff states that the reported quotes in the majority of cases do not vary according the minutes of use flowing through the switches. Staff refers to Mr. Tucek's testimony that "[i]t is true that the results of the Nortel

contract and the Lucent and AGCS quotes are expressed on a per-line basis." (Tucek Reb., Verizon Ex. 2.0, p. 38).

Staff also disputes Mr. Tucek's assertion that even though the vendor quotes do not vary with the number of minutes of use flowing through the switches, that in fact these estimates are developed based on such usage information. Staff states the following example:

> To illustrate, consider the following example of a long-distance customer. Suppose AT&T provides long distance service at 10 cents per minute. However, it costs AT&T 8 cents a minute to provide service to urban customers and it costs AT&T 15 cents per minute to provide service to rural customers. Clearly the cost of providing service is geographically sensitive. However, an AT&T customer in a rural area cannot claim to pay 15 cents a minute. Because AT&T supplies the customer service at 10 cents a minute the customer incurs a cost of 10 cents a minute.
>
> Verizon's claims are the equivalent of the long distance customer's claims that because it costs AT&T 15 cents a minute to provide service that the customer pays 15 cents a minute -- despite the fact that the customer *actually pays* 10 cents a minute. Verizon is contending that the Vendor quotes it submitted in this proceeding *do not* reflect the price Verizon pays, because the Vendors' costs of supplying switches depends on the number of minutes of use expected to flow through the switch. However, Verizon has produced per-line Vendor quotes as evidence of the price *it* pays for switches. The prices that *Verizon* pays are the prices that must be used according to Commission cost rules in this proceeding.

(Staff Initial Brief, p. 31, *emphasis* supplied).

Staff acknowledges Mr. Tucek's testimony that when Verizon solicited quotes from vendors, it supplied the vendor's usage information and therefore the costs Verizon pays are, despite the Vendor quotes, based on minutes of use flowing through the switches. Staff asserts that its long distance example again applies. According to Staff, Verizon's claim would be equivalent to the claim that if more customers were located in urban areas then the average price of long distance service would be less than 10 cents a minute. Staff does not dispute that, in this respect, Verizon's argument has merit. According to Staff, Verizon's vendors *might* have based

their average quotes in some part on the usage information supplied by Verizon. However, Staff asserts that there is no evidence regarding how—or even if—Verizon's vendors considered such usage. Staff states that as evidence in this proceeding Verizon has submitted the equivalent of a 10 cents a minute quote. Staff states that Verizon's conjectures as to how that 10 cents was derived are speculative.

Staff also asserts that while SCIS and CostMod models to allocate costs among per line and per minute of use elements in some manner, there is no indication that allocation is done correctly. Staff characterizes these programs as "black boxes." Staff notes that on cross-examination, Mr. Tucek was not able to state where the flat rate right to use fee was allocated.

Staff acknowledges that this Commission and other state Commissions have accepted costs developed with the SCIS and CostMod models. Staff, however, states that "past acceptance does not warrant continued acceptance." (Staff Initial Brief, p. 32).

Staff further states that Verizon's reference to the audit of the SCIS by Arthur Anderson should not imply that the current version is a credible vehicle to establish forward looking costs should be given no credence.

Additionally, Staff asserts that the vendor quotes provided by Verizon in this proceeding were developed based on traffic characteristics supplied by Verizon to the vendors. Staff notes that these characteristics were based on the actual characteristics of Verizon's switches in Illinois. However, Staff further notes that Mr. Tucek explained that the SCIS model apportions costs among switches in Illinois based on nationwide traffic characteristics. Staff states that there is a mismatch between traffic figures Verizon uses, and those it asserts vendors relied upon to develop switch price quotes. Staff states that this "potentially" inflates Verizon's Illinois costs estimates over Verizon's actual forward-looking costs.

Staff states that it has attempted to elicit evidence that the SCIS is internally consistent, but Verizon has not supplied—and presumably cannot supply—the nationwide usage characteristics used in the SCIS model that would enable Staff to verify that the sum of usage times the average investments produced by the SCIS sum to the total switch investment input the SCIS. As such, Staff states that the total investment that comes out the SCIS and goes into the ICM is unknown and unverifiable.

Staff states that Mr. Tucek dismisses the issues of over-recovery and under-recovery as rate-design issues. Staff, however states that if Verizon's cost estimates are inflated, rates based on these costs will likewise be inflated.

Staff states that element based cost estimates are, in many instances, much easier to develop consistently with cost causation principles than are service based elements. However, Staff asserts that with numerous parties purchasing varying portions of the switching associated with the line, charging for switching as incurred on a per line basis may not be feasible, as a result of the fact that the switch cost associated with the line are shared by numerous *services*. Staff states that because the per line switching cost is shared among customers when Verizon is providing the switching services, the LRSIC estimate of switching for this line cannot be a per line cost. Staff states Verizon must find some way to allocate the shared per line switching costs among the customers purchasing the switching services associated with the line.

Staff, thus asserts that under LRSIC (or TSLRIC) pricing principles, it is perfectly acceptable for Verizon to apportion port charges—which Verizon incurs on a per line basis—to per minute of use charges, in order to apportion those costs across *all* of the various switched services that make use of the port. Staff, however, states that if Verizon elects to use this

methodology, it must account for growth to prevent port costs from being inflated by growth in the number of minutes flowing through the switch.

Finally, Staff disputes the validity of Mr. Tucek's regression analysis that Verizon incurs switch costs as per minute of use costs. Staff gives three reasons for its disagreement. First, Staff states that Verizon has supplied vendor quotes that show that Verizon pays for switches based on the number of lines, trunks, and host-remote connections. Staff Ex. 2.0, Attachment 2.5. Staff states that this indicates that if two switches are configured with the same number of lines, trunks, and host-remote connections, the price quotes provided by Verizon indicate that Verizon will pay the same price for the two switches, even if there is some variation in the minutes of use flowing through the switches. Staff states that, as such, there is no need to estimate whether minutes of use flowing through the switches effect switch costs.

Second, Staff states that:

> Mr. Tucek attempts to demonstrate that switch prices are dependent on minutes of use flowing through the switch by showing that the number of lines cannot explain all of the variation in switch costs. Verizon Ex. 2.0 at 74. As Mr. Tucek's further analysis demonstrates, there is evidence that his original regression simply failed to model the correct functional relationship between lines and switch prices. Verizon Ex. 3.0 at 19. Stated simply, Mr. Tucek's analysis was equivalent to trying to find a straight line to fit his data points when the data points formed a curve. When he did the equivalent of trying to find a curve to fit his data points, the curve, unsurprisingly, fit better. Having found a somewhat better fit, Mr. Tucek opines that more than 20 percent of the variation in cost per line remains unexplained for the base units. In contrast 80 percent of the variation is explained by per line costs. Ultimately, Mr. Tucek has demonstrated exactly the opposite of what he intended to show -- he has shown that switch prices are determined predominately by the number of lines on the switch.

(Staff Initial Brief, p. 37).

Third, Staff states that Mr. Tucek abandoned his analysis. Staff states that on cross-examination, when asked what portion of switch costs could be attributable or explained by usage, Mr. Tucek responded as follows:

> No, I do not [know], and I don't know if [sic] there's such a regression that would allow you to do that, the reason is lines and [sic] usage are correlated. And there's a statistical problem called multicollinearity, and the problem you have in estimating regression equations is your two variables are correlated, are tracked to together.
>
> …
>
> So no, I don't think I could say how much usage is attributable, how much use attributes to the cost of the switch using regression analysis as you suggested. I have to rely on how I know switches are engineered and designed.

(Tr. at 87-89).

According to Staff, Mr. Tucek is conceding that he is not relying on the statistical regression at all to formulate his conclusions.

Finally, Staff states that while Mr. Tucek criticizes Staff for not testing the regression analyses that he ran, Staff states that Mr. Tucek did not offer the computation and formulation of his regression analysis as evidence.

3. AT&T

AT&T also asserts that a review of the vendor price quotes that Verizon relies on to support its total switch investment indicates that Verizon pays vendors on a per line basis. According to AT&T, however, unless growth is factored in, the recovery of non-traffic sensitive costs through traffic sensitive charges will likely result in an overestimation of costs going forward.

AT&T asserts that switches are basically large computers, and advances in the computing technologies associated with memory and processing power have increased the usage capacity of

digital switches. AT&T states that today's digital switches "rarely" reach capacity (or "exhaust") by exceeding the capabilities of the processor. Instead, AT&T asserts that switches exhaust when there are no longer any available ports. AT&T states that Verizon's own calculations of very low processor utilization factors also strongly suggest that switches are port constrained rather than processor constrained. AT&T asserts that if this were not the case, Verizon's calculated processor utilization factors should be much higher. AT&T states that for this reason, it is clear that the getting started costs are not volume sensitive and should not be assigned to switch usage. Instead, AT&T asserts that the getting started costs should be allocated to the port—or the volume insensitive cost—not to switch usage—or the volume sensitive cost. Otherwise, AT&T states, switch usage costs are overstated. AT&T further states that while this increases the UNE port cost, this would be offset by reducing the call setup cost element of switch usage.

4. Reply

[to be completed by the Administrative Law Judge]

5. Commission Conclusion

The Commission is of the opinion that except for line termination, switching costs are usage-sensitive and need to be modeled as such. The record on this issue is clear. Staff and AT&T essentially misunderstand the fundamental nature of switching. The record does not contain any credible dispute that the capacity of a switch depends on more than just the number of lines. The Commission agrees with Verizon that a given switch is engineered with the quantities and sizes of the components needed to serve a given number of lines and trunks based on the offered load.

Verizon provided a thorough explanation of the nature of switching. Staff and AT&T, however, ignore everything in the switch between the line modules and the central processor.

The Commission agrees with Verizon that AT&T's assignment of SCIS "getting started" investment to the port overlooks the fact that most of the components of a digital switch are usage-sensitive. The Commission is of the opinion that it is much more consistent with the principle of cost-causation to assign only the getting-started costs associated with line terminations to the port, and to leave the rest assigned to call setup.

Additionally, the record demonstrates that switches are not purchased on a per-line basis. Unbundled access to Verizon's switches should not be offered on a per-line basis and all of the features and switching cannot be included in a flat-rate port charge. The Commission is of the opinion that to do so would effectively price the switching and features at zero on the margin to the CLECs.

Furthermore, the success of the CLECs' marketing efforts will consequently determine the actual demand on the switch processor and other usage-sensitive switch resources—if it increases enough, it may well be that a larger processor must be installed or that additions to the switching fabric or controllers will have to be made. Therefore, the Commission rejects claims that switching costs are not usage-sensitive on the basis of vendor quotes and contracts. To do so ignores the fact that in the real world, switches are engineered on the basis of the offered load.

Additionally, the evidence demonstrates that the worksheets corresponding to the quote requests for the Lucent model offices require such usage-related inputs as the originating and terminating CCS per line, the percent of intra-office traffic, the line-concentration ratio, and the number of trunks. The record contains a copy of Verizon's engineering procedure that documents application of the Service Ready II ("SRII") contract with Nortel. The procedure makes it clear that the model office configurations covered by the contract are based on fixed number of trunks per line consistent with a specified CCS per line.

The Commission further notes that in ICC Docket No. 00-0700, we rejected Ameritech's proposed usage-sensitive ULS rate because the Commission found that Ameritech's switching costs were incurred on a per-line basis. (Ameritech Order, p. 4). In this case, however, the record demonstrates overwhelmingly that Verizon pays for switching depend on the offered load each switch is engineered to handle. As such, the reasoning from Docket No. 00-0700 does not apply in the instant proceeding.

Finally, the Commission approves the use of SCIS and CostMod. These models are established and have been approved by other state commissions for both Verizon and for other companies. SCIS and CostMod estimate switching costs based on the manner in which digital switches are designed. No credible evidence was proffered against the use of these models. As such, the Commission accepts their use in the development of Verizon's costs for unbundled switching and switched access.

C. Switch Discounts

1. Verizon

Verizon explains that ICM uses the output from SCIS to determine the costs of the Nortel and Lucent switches and CostMod is used to determine the costs of the GTD-5. Verizon further explains that both of these programs base the costs on the usage characteristics of each switch in Verizon's Illinois network. Verizon states that material prices are used as inputs to SCIS and CostMod which are used to produce the required investments for ports, call origination and termination, usage and switch features.

Verizon states that for Nortel switches, Verizon bases inputs to SCIS on contracts for these switches. For the 5ESS and the GTD-5 switches, Verizon states that it purchases these switches based on vendor quotes. Contracts for these switches do not exist.

Verizon witness Tucek explained that vendor quotes were necessary for Lucent's 5ESS, and AGCS's GTD-5 because "there was no other way to get switch prices." (Tr. at 58). Mr. Tucek further testified that Verizon did not have the ability to approach vendors and request a price for every switch that Verizon has ever purchased from the Vendor for Illinois. According to Mr. Tucek, this information is not available and there is no incentive on the part of the Vendor to provide that level of detail. Additionally, Mr. Tucek testified that obtaining an actual quote for each existing switch is problematic because the vendor would need the usage characteristics for each central office. As such, Mr. Tucek testified that Verizon had to obtain a quote from the Vendor based on a set of model offices taking into account traffic characteristics and line sizes.

Verizon witness Tucek provided a detailed explanation of how discounts were calculated in his Rebuttal Testimony. He explained that SCIS and CostMod were run with no discount for a set of eight model office clusters for the 5ESS, GTD-5 and DMS-100 switching technologies. For the DMS-10, Mr. Tucek testified that SCIS was run with no discount for the first five model office clusters only due to its initial capacity. For usage inputs, he explained that the SCIS and CostMod runs were based on system-wide averages for comparably sized switches. Discounts were computed for each of the eight model clusters (five for the DMS-10) based on the total modeled switch costs and on the switch costs resulting from the vendor quotes and the Nortel contract for initial switch purchases. Next, weighted averages of these discounts across the cluster sizes were calculated and used as inputs in the subsequent SCIS and CostMod runs for each Verizon Illinois wire center.

Verizon asserts that the dates of the contract with Nortel and the vendor quotes from AGCS and Lucent are consistent with the use of 1999 ARMIS data and reflects what Verizon pays for switches from these vendors. Verizon disputes claims that Verizon should have relied

on current list prices and the actual discounts available from current contracts because they ignore the fact that the contract with Nortel does not specify a discount from a "list price," and there are no specified discounts from "list" for Lucent or AGCS. Verizon asserts that it has based the inputs on the best information available.

Verizon witness Tucek explained that the average switch discounts used by SCIS and CostMod actually understate the forward-looking switching costs that Verizon faces. Verizon asserts that ICM places a heavier weighting on initial switch pricing. Verizon states that with switching additions likely to be more expensive relative to initial switch purchases, the resulting cost estimates are understated.

Verizon notes that it originally calculated an average switch discount for each technology versus a discount that varied by line size and by technology. On surrebuttal, Verizon witness Tucek accepted AT&T witness Boyles' criticism on this issue and, accordingly, modified the switching inputs for both the switched access and UNE costs to reflect the application of the switch discount by line size and technology.

Finally, Verizon notes that ICM is a model and, as such, it is a simplification of reality. As such, Verizon states that calls for actual discounts to be used are unrealistic. Verizon states that it cannot be expected to ask its vendors for current pricing *on each switch* in Illinois and obtain meaningful results. Verizon states that there is no alternative to the approach that Verizon has taken with ICM which is to obtain pricing for a set of model office clusters and use this pricing to develop the SCIS and CostMod discount inputs.

2. AT&T

AT&T asserts that the costs produced by Verizon's use of inefficient technology is excessive. AT&T asserts that this is compounded by ICM's use of switch prices that are far in excess of that which Verizon has actually paid for switches in the past or what it could be

reasonably expected to pay on a going-forward basis. AT&T disputes the validity of the vendor quotes prepared specifically for the purposes of cost studies for the Lucent 5ESS and the GTD-5 that date back to 1999 and 1998, respectively, even though GTE actually purchased a 5ESS remote switch in 1997 and a GTD-5 remote in 1998. AT&T asserts that the problem with using these vendor quotes is that, in addition to being quite outdated, they do not necessarily reflect the actual prices that would be produced in an arms-length negotiation. AT&T states that according to Mr. Tucek, the vendors were aware that the quotes in question were being prepared for purposes of a costing exercise rather than for the purpose of procuring an actual switch. AT&T further states that the quotes were based upon a set of sample offices and not site specific.

AT&T compares the switch costs produced by Verizon's cost model for the Golconda wire center to the price actually paid by Verizon in 1998. AT&T asserts that according to Staff, the model calculated a cost 57% greater than the amount paid for this switch. AT&T states that Verizon's Mr. Tucek challenged that figure "but conceded that even under his own calculation the model cost was 34% greater than the actual cost." (AT&T Initial Brief, p. 12, *citing* Tucek Reb., Verizon Ex. 2.0, p. 39-40).

3. Reply

[to be completed by the Administrative Law Judge]

4. Commission Conclusion

The Commission initially notes that the issue of switch discounts is an input issue. As such disagreements over the appropriateness of an input does not warrant rejection of ICM.

Nonetheless, the Commission is of the opinion that Verizon has properly estimated the switch pricing inputs. For Nortel switches, Verizon properly based inputs to SCIS on contracts for these switches. For the 5ESS and the GTD-5 switches, the Commission agrees with

Verizon's use of vendor quotes. The record clearly indicates that contracts for these switches do not exist.

The Commission agrees with Verizon that that vendor quotes were necessary for Lucent's 5ESS, and AGCS's GTD-5 because there was no other way to get switch prices. It is simply unreasonable to suggest that Verizon approach its vendors and request a price for every switch that Verizon has ever purchased from the vendor for Illinois. The Commission is of the opinion that Verizon properly obtained a quote from the vendor based on a set of model offices taking into account traffic characteristics and line sizes.

The Commission disagrees with AT&T's claim that Verizon should have relied on current list prices and the actual discounts available from current contracts. This position ignores the fact that the contract with Nortel does not specify a discount from a "list price," and there are no specified discounts from "list" for Lucent or AGCS. The Commission agrees that Verizon based the inputs on the best information available.

The Commission also agrees with Verizon that the average switch discounts used by SCIS and CostMod actually understate the forward-looking switching costs. ICM places a heavier weighting on initial switch pricing. With switching additions likely to be more expensive relative to initial switch purchases, the resulting cost estimates are clearly understated.

ICM is a model and, as such, it is a simplification of reality. Calls for actual discounts to be used are unrealistic. The Commission is of the opinion that there is no alternative to the approach that Verizon has taken with ICM which is to obtain pricing for a set of model office clusters and use this pricing to develop the SCIS and CostMod discount inputs. As such, Verizon's proposed switch pricing is accepted.

D. Switch size and Type

1. AT&T

AT&T states that with regard to the choice of switching technology, Mr. Boyles noted that given the number of lines and the capacity of the switches selected at each location, Verizon models switches that are too large for the wire centers they serve. Mr. Boyles also noted that Verizon includes the GTD-5 switch in the technology mix even though it stopped purchasing GTD-5 end office switches in 1989.

2. Verizon

Verizon asserts that AT&T's claim that ICM models base units and remote switches that are too large for the number of lines served is not a valid argument. Verizon states that Mr. Boyles ignores the fact that digital switches are scaleable. As such, Verizon state that the capacities that Mr. Boyles quotes in his Direct Testimony are only the upper limits on the number of lines each switch type can serve—they are not the capacity of every such switch installed in Verizon's network or modeled by ICM. Verizon states that while it is true, for example, that a DMS-100 can be equipped to serve more than 100,000 lines, neither in Verizon's real network nor in the modeled network are these switches equipped to serve the maximum possible number of lines.

Verizon asserts that AT&T's position on this issue is equivalent to arguing that someone who only drives 40 miles per hour on city streets has bought too much car because it is capable of speeds in excess of 100 miles per hour. Verizon states that Verizon Data Request VZ-ATT 2.02 referenced Mr. Boyles' criticism that the selected switches were too large, and asked AT&T to identify which switches Mr. Boyles would select to model Verizon's forward-looking switching costs for each of the wire centers in Verizon's Illinois service territory. According to Verizon, Mr. Boyles' response did not provide a specific switch type for each of the wire centers

as requested, but it did offer a decision rule that would select 5ESS's, DMS-100's, DMS-10's and the corresponding remotes to model Verizon's costs. Verizon asserts that this response is in direct contradiction to Mr. Boyles' claim that the switching technologies Verizon has selected are too large for the given wire centers based on the maximum number of lines each switch can be equipped for. Verizon contends that Mr. Boyles' does not understand the difference between the maximum number of lines a particular switch can be equipped for, and the number of lines that are actually equipped.

Verizon further asserts that AT&T's claim that the GTD-5 is not a forward-looking switch lacks merit. Verizon notes that while it last purchased a GTD-5 base unit in Illinois in 1989, Lucent/AGCS continues to market and support the GTD-5, and Verizon continues to buy remotes. Verizon further notes that in April, 1997, BC TEL signed a $60 million volume purchase agreement with AGCS to purchase GTD-5 Class 5 digital switching equipment and IN products. Verizon asserts that in May, 2000, both the Michigan Public Service Commission and the Michigan staff concluded that the GTD-5 is a forward-looking switch and should be used to estimate Verizon's switching costs. (Order, Michigan Docket No. U-11832, pp. 24, 27).

3. Commission Conclusion

The Commission rejects AT&T's claim that ICM models base units and remote switches that are too large for the number of lines served. The record clearly indicates that digital switches are scaleable and the capacities that Mr. Boyles quotes in his Direct Testimony are only the upper limits on the number of lines each switch type can serve. They are not the capacity of every such switch installed in Verizon's network or modeled by ICM.

Furthermore AT&T's claim that the GTD-5 is not a forward-looking switch lacks merit. The record indicates that Lucent/AGCS continues to market and support the GTD-5, and Verizon continues to buy remotes. Furthermore, there is no evidence in the record that supports AT&T's

position that this switch is not a forward-looking technology. Indeed, AT&T did not even address the capabilities of the switch.

E. RTU Fees

AT&T witness Boyles asserts that RTU fees are already included in Verizon's discount calculations and, thus, should not be added again as a separate input to SCIS. In his Rebuttal Testimony, Mr. Boyles states that:

> …the SCIS/MO input screen for entering getting started investments states, "If capitalizing RTU fees, enter non-feature related material amount to include in the GS Investment: Range: 0 – 9,999,999 Typical Value: 0" This SCIS/MO help message implies that Mr. Tucek erred by including RTU fees for a standard set of end-user features.

(Boyles Reb., AT&T Ex. 2.01, p. 10).

Verizon responds that Mr. Boyles statement is based on his incorrect assumption that the per-line charge for operating software in the Nortel contract reflects all of the RTU fees associated with this vendor's switches. As Mr. Tucek explained:

> …Verizon purchases RTU fees from all three vendors, both in connection with the switch purchase and under a national contract for RTU fees. The RTU fees purchased under the national contract are above and beyond those included as part of the switch purchase and provide for a standard set of end-user features by switch type as well as upgrades to the operating system over the life of the contract. These RTU fees vary by switch type and are actually paid by Verizon to the vendor.

(Tucek Reb., Verizon Ex. 2.0, p. 72).

With respect to the note from the SCIS input screen quoted by Mr. Boyles, Verizon states that it does not reflect the current industry accounting practice of capitalizing both operating system and application software fees. Verizon states that its treatment of RTU fees is not an error and is consistent with the manner in which they are incurred. Verizon further states that, in

any event, Mr. Boyles is improperly basing his conclusion on a SCIS input screen when the evidence points to the contrary.

Commission Conclusion

The Commission agrees with Verizon that AT&T's position is based on a misunderstanding. The evidence indicates that RTU fees are not included in Verizon's discount calculations.

F. Investment Adjustment Factor

1. Verizon

Verizon states that ICM models switching costs that reflects both the prices of initial switch prices, including discounts, along with the prices for additions. Verizon explains that the pricing for additions is calculated through the use of the investment adjustment factor ("IAF") input. According to Verizon, the factor is calculated for each of the base unit line sizes combination. Verizon asserts that line and trunk growth for each base unit is calculated over a six-year timeframe using Illinois-specific growth rates, and is priced as additions to existing switches. Verizon further asserts that the IAF input is calculated for each base-unit and line-size combination as the present value of the purchase cost of the initial switch plus the additions, divided by the initial switch cost. Verizon state that, consequently, the SCIS and CostMod outputs, which only reflect the initial switch pricing, are multiplied by this factor to produce a blended switch cost that reflects the pricing for both initial switch purchases and for line additions.

According to Verizon, Mr. Boyles' criticism of the IAF is based on a basic misunderstanding of its purpose. Verizon states that the IAF input is used only to produce a blended switch cost that reflects the pricing for both initial switch purchases and for line

additions. Verizon asserts that it is not utilized to model the impact of forecasted line growth by wire center as Mr. Boyles incorrectly states.

Finally, Verizon states that line size is just one determinant of switch costs. Verizon disagrees with AT&T's proposed adjustment of the modeled investments from SCIS and CostMod to the calculated per-line costs that the discounts are based upon. Verizon states that this adjustment ignores what AT&T concedes to be true—that line size is not the only determinant of switch costs. In forcing the modeled investments to agree with the per-line costs of the model office clusters, AT&T is in effect asserting that line size is all that matters. Verizon asserts that this is contrary to Mr. Boyles own testimony and ignores the wire center specific differences in costs that CostMod and SCIS model.

2. AT&T

AT&T states that there are two problems with Verizon's calculation of the IAF factor. First, AT&T states that Verizon assumes that at the beginning of the six-year period only enough capacity to handle the current demand for lines is purchased without also initially installing some additional lines to handle anticipated growth in the short-run. According to AT&T, this is not the most efficient way to account for anticipated growth. AT&T states that switch additions beyond the first two years are not likely to cost more than the initial cost per line because switching prices are continually dropping. According to AT&T, the projected rate of reduction in prices should offset the incremental costs per line used by Verizon.

Second, AT&T asserts that the IAF formula artificially inflates costs on a per unit basis by allocating both the initial switch investment incurred to serve the total current demand and the additional investment to serve growth over only the initial units of demand. AT&T states that it does so by including the present value of the incremental investment for growth in the numerator, but excluding the present value of the additional line counts in the denominator of the

cost-per-line calculations. AT&T states that there is a mismatch between the present value of the investments and the present value of the demand that will bear those investment costs. AT&T disputes Mr. Tucek's claim that the use of the IAF merely reflects the differences in prices for initial switch purchases versus switch additions. As such, AT&T states that including the cost for growth lines in the numerator but excluding the additional growth lines from the denominator the cost per line is overstated.

AT&T proposes a new investment adjustment factor that adjusts the investments output by the SCIS and CostMod switching models. AT&T states that:

> …By adjusting the outputs of the switching models, instead of the inputs to the switching models, he [Mr. Boyles] avoided having to rerun the switching models, generating thousands of pages of output reports in order to populate the ICM switching investment table. The investments per line output by the switching models differed from the target price per line that Verizon's discounts were supposed to achieve. To correct this discrepancy, Mr. Boyles created an investment adjustment factor that equated the switching investment to those target prices per line. For each switch, he examined all of the possible technologies and used the technology that yielded the lowest target price per line for the number of lines in each wire center. Unlike Verizon's use of the existing switch technology, this approach is consistent with the forward-looking cost principles.

(AT&T Initial Brief, p. 23; citations omitted).

3. Reply

[to be completed by the Administrative Law Judge]

4. Commission Conclusion

The Commission is of the opinion that ICM's IAF factor is reasonable. The pricing for additions properly is calculated through the use of the IAF input.

Additionally, the Commission rejects AT&T's proposed adjustment of the modeled investments from SCIS and CostMod to the calculated per-line costs that the discounts are based

upon. This adjustment ignores what AT&T concedes to be true—that line size is not the only determinant of switch costs. The Commission agrees with Verizon that in forcing the modeled investments to agree with the per-line costs of the model office clusters, AT&T is in effect asserting that line size is all that matters. This is contrary to Mr. Boyles own testimony and ignores the wire center specific differences in costs that CostMod and SCIS model.

G. Processor Utilization

1. Verizon

Verizon asserts that the Processor Utilization Factors ("PUF") used in SCIS are reasonable. Verizon states that switches exhaust because of both line and processor limitations. Verizon further states that the PUF inputs calculated by Verizon and input into SCIS are consistent with processors reaching exhaust and having to be replaced. Verizon states that the PUF inputs calculated for use in SCIS only reflect the call processing portion of the available real time. As such, Verizon asserts, they may appear low. For example, Verizon witness Tucek testified that in the DMS-10 switch, 35% of the processor real time is used for administrative tasks such as table updates, switch diagnostics and maintenance functions. Accordingly, Verizon states that a PUF input of 10% corresponds to an overall processor utilization of 45%.

2. AT&T

Mr. Boyles also testified that the processor utilization factors calculated by Verizon are low:

> The processor utilization factor indicates how much demand is placed on the central processing unit of the switch. These low processor utilization factors are another indication that Verizon has overbuilt its switching network and/or that its technology selection is economically inefficient.
>
> I could not determine how Verizon calculated these processor utilization factors from the supporting documentation provided by Verizon. Because Verizon treats the "getting started cost" of a

> switch as a volume sensitive cost, a lower processor utilization factor translates into a higher getting started investment per minute of use.

(Boyles Dir., AT&T Ex. 2.0, pp. 18-19).

AT&T asserts that the processor utilization factors calculated by Verizon are low and is an indication that Verizon's selection of technology for switching is economically inefficient. AT&T states that the "getting started" costs of a switch are fixed costs, yet Verizon treats these switch costs as a volume sensitive cost. According to AT&T a lower processor utilization factor translates into a higher getting started cost per minute of use. AT&T states that by using unduly low processor utilization factors Verizon has inflated its switch investment. Accordingly, AT&T asserts that the Commission should adopt Mr. Boyles proposed adjustments to the processor utilization factors used by Verizon.

3. Reply

[to be completed by the Administrative Law Judge]

4. Commission Conclusion

The Commission rejects AT&T's claim that the PUF factors used in SCIS are low. The record demonstrates that they are indeed reasonable. AT&T simply ignores that the PUF inputs calculated for use in SCIS only reflect the call processing portion of the available real time and that some of the processor real time is used for administrative tasks such as table updates, switch diagnostics and maintenance functions. As such, the PUF factors utilized are reasonable.

H. Engineer, Furnish and Install Factor

1. AT&T

AT&T takes issue with the Engineer, Furnish and Install Factor ("EF&I") that Verizon applies to switch investment in order to account for additional costs incurred for the engineering and installation required by Verizon for installing a switch. AT&T acknowledges that Verizon

witness Mr. Tucek defended the EF&I factors claiming that the average EF&I input across all of Verizon's Illinois switches is 51.8% and represents Verizon's actual costs in Illinois. AT&T, however, takes the position that the use of historical costs is not an appropriate basis for calculating forward-looking costs. AT&T cites 47 CFR § 51.505(d) provides:

> (d) Factors that may not be considered. The following factors shall not be considered in a calculation of the forward-looking economic cost of an element:
>
> (1) Embedded costs. Embedded costs are the costs that the incumbent LEC incurred in the past and are recorded in the incumbent LEC's books of accounts.

AT&T states hat the use of historical accounting information as the basis for the EF&I factor is inappropriate. Moreover, AT&T states that this flaw in Verizon's methodology compounds the overstatement of costs that results from Verizon's decision to model its current switches at each wire center rather than to assume a network configuration that is least cost using the most efficient switches at each location to serve the anticipated demand.

AT&T asserts that Verizon has not met its burden of proving that its cost study complies with FCC requirements. AT&T witness Mr. Boyles opined that an overall EF&I factor of not more than 30% would be reasonable. AT&T states that Verizon's average of 51.8% is too high and applying that factor to the already inflated initial switch investment resulting from inefficient switch technology choices contributes to a further overstatement of costs.

2. Verizon

Verizon contends that Mr. Boyles is wrong. Verizon asserts that the problem with AT&T's recommendation is that Mr. Boyles proposal was based on an ALJ's recommended decision in a UNE docket involving a Verizon affiliate in New York. Verizon notes that although the ALJ recommended an EF&I factor of 30%, the New York PSC issued a final order

in that case that rejected the ALJ's recommendation and ordered the input be reduced from 43.5% to 40%. (Order, New York Public Service Commission Docket No. 98-C-1357, Jan. 23, 2002, p. 33).

Additionally, Verizon states that Mr. Boyles is incorrect in his claim that ICM's EF&I factors are based on historical costs. Verizon witness Tucek testified that the EF&I factors are based on current labor costs and on the same forward-looking switch investments used to develop ICM's switch discount and IAF inputs.

Verizon further asserts that an across-the-board EF&I input for ICM based on the order in the New York UNE case does not make sense in this case because it would not reflect Verizon's Illinois costs. Verizon asserts that Mr. Boyles is reaching for anything that would lower Verizon's rates. In doing so, Verizon asserts that he completely ignores the fact that there is no basis for concluding that the EF&I inputs between the two states should be the same. Verizon state that Verizon's Illinois input is based on the labor and switching costs that it actually experiences. Additionally, Verizon states that the input varies by switch size and technology. Mr. Tucek testified that the New York input is a composite across several former Bell Atlantic states and is applied to all switch sizes. Verizon maintains that there is no comparison between the population dense states in the Northeast and the rural service area of Verizon in Illinois. Verizon asserts that even if the Northeast states had comparable labor costs, they have a different mix of switch sizes and types.

Finally, Verizon asserts that AT&T wrongly claims that ICM's EF&I factors are based on historical costs. Verizon asserts that factors are based on current labor costs and on the same forward-looking switch investments used to develop ICM's switch discount and IAF inputs. Verizon also states that Mr. Boyles is also wrong when he claims that he acknowledges the

linkage between EF&I costs and switch investment. Verizon notes that the recommended decision that Mr. Boyles relied on specifically provided for an upward adjustment in the proposed EF&I input to reflect the ALJ's proposed downward adjustment in Verizon New York's switching costs. Verizon notes that Mr. Boyles proposed no such upward adjustment for the EF&I input even though he proposed a decrease in Verizon's Illinois switching costs. Verizon claims that Mr. Boyles cannot credibly claim he has relied on the best available support for his EF&I recommendation when he ignores the ALJ's own recommendation on this topic, let alone the final order in the New York case.

3. Commission Conclusion

The Commission is of the opinion that AT&T's argument lacks merit. It was originally based on an ALJ's recommended decision in a UNE docket involving a Verizon affiliate in New York. The Commission believes that an across-the-board EF&I input for ICM based on the order in the New York UNE case does not make sense in this case because it would not reflect Verizon's Illinois costs. In any event, the New York PSC consequently issued a final order in that case that rejected the ALJ's recommendation.

Furthermore, there is no basis for AT&T's claim that ICM's EF&I factors are based on historical costs. The record demonstrates that the EF&I factors are based on current labor costs and on the same forward-looking switch investments used to develop ICM's switch discount and IAF inputs. As such, as presented, the EF&I factors incorporated into ICM are reasonable.

I. Sales, Marketing and Advertising ("SMA") Expense

1. AT&T

AT&T proposes an adjustment to the sales, marketing and advertising expenses included in ICM's calculation of switched access costs. The source of these expenses are expenses recorded in three accounts, product management (6611), sales (6612) and product advertising.

(6613). According to AT&T, Verizon then allocated the total amounts in these accounts to business, residential, special access and switched access services based upon revenues, but did not explain how it determined the specific amount allocated to switched access. AT&T states that the inclusion of this amount in the costs calculated by Verizon's ICM methodology is inappropriate and does not represent a forward-looking cost analysis. AT&T asserts that the SMA expense relies exclusively on historical data.

Further, AT&T states that any allocation of advertising expense is appropriate since a toll carrier does not have the option of selecting an alternative access provider to originate or terminate a toll call to a Verizon local customer. AT&T asserts that switched access service is not something that requires any marketing.

2. Verizon

Verizon asserts that AT&T's proposed elimination of all SMA costs from the switched access LRSICs is based on the unsupported claim that Verizon does not incur marketing costs for switched access. Verizon asserts that this is simply not the case. Verizon further asserts that the inputs used by ICM to model SMA costs are based on the expenses recorded in three accounts: (1) Product Management (account 6611); (2) Sales (account 6612); and (3) Product Advertising (account 6613).

Verizon explains that account 6611 includes the costs incurred in performing administrative activities related to marketing products and services. According to Verizon, these activities include competitive analysis, product and service identification and specification, test market planning, demand forecasting, product life cycle analysis, pricing analysis, and identification and establishment of distribution channels. Verizon states that examples of specific groups and activities within this account that relate to switched access include the Market Strategies group which is responsible for carrier market analysis and customer

segmentation, and the Network Access Services group which is responsible for the management of the network access functions, including allowing other carriers' access onto Verizon's network.

Verizon further explains that Account 6612 includes costs associated with the determination of individual customer needs, development and presentation of customer proposals, sales order preparation and handling, and preparation of sales records. Verizon asserts that examples of specific groups and activities within this account that relate to switched access include the National Sales Account group which is responsible for network access sales to other carriers, including AT&T, MCI, and Sprint. According to Verizon, these activities include sales, sales follow-up, customer service, and customer assurance. Verizon further asserts that Carrier Operations also is responsible for running the day-to-day activities of the carrier market business segment, including operations support.

Verizon further states that Account 6613 includes costs incurred in developing and implementing promotional strategies to stimulate the purchase of products and services. According to Verizon, this account excludes nonproduct-related advertising, such as corporate image, stock and bond issue and employment advertisements. Verizon states that examples of specific groups and activities within this account that relate to switched access include the Product Marketing group which acts as the communications liaisons for Verizon to plan and coordinate direct marketing efforts for all carrier markets customers. Verizon states that product Marketing deals primarily with Product Management in coordinating new product introductions and specific product promotions as well as other efforts.

Verizon asserts that AT&T's response to data request VZ-ATT 2.05 indicates that, in lieu of determining which portion of the above accounts should be excluded from switched access

costs, they simply eliminated all of the dollar amounts labeled as marketing costs. Verizon states that AT&T's recommendation suggests that his main objective is to advocate reduced costs in whatever manner possible.

Verizon further states that the SMA inputs used by ICM to develop switched access costs do not recover all of the costs related to the above accounts. Verizon explains that only 28% of account 6611, 12% of account 6612, and 4% of account 6613 were used in the development of the SMA inputs relevant to switched access. According to Verizon, the remainder of these accounts was used to develop SMA factors related to retail services such as residential and business basic exchange service, and special access services.

Additionally, Verizon explains that the SMA inputs were developed as a percent of revenues, but are applied to the total of depreciation, return, taxes, maintenance and support, and billing and collection expenses. Consequently, Verizon states that there is a built-in shortfall in the recovery of the SMA costs.

3. Commission Conclusion

The record clearly demonstrates that Verizon incurs some marketing costs for switched access. AT&T's proposed elimination of all SMA costs from the switched access LRSICs is unsupported.

J. Call Completion Ratios

AT&T witness Boyles also takes issue with the fact that Verizon uses different call completion ratios in the SCIS model than it uses in ICM. Mr. Boyles notes that ICM uses a call completion ratio of 65% while SCIS uses a call completion ratio of 100%. Accordingly, Mr. Boyles alleges that SCIS uses an unreasonably high call completion ratio.

Verizon states that the approach followed by Verizon in its cost study filing is correct since it allows the call completion ratio to be varied by the user without having to rerun SCIS-IN.

Moreover, Verizon states that the impact on the estimated costs is not material since only three inputs to ICM are affected, and since the decrease in the unit investments is less than five hundredths of 1% in each instance. Consequently, Verizon states that even if Mr. Boyles contention that the same value should be used in both ICM and SCIS, there would be no meaningful impact on resulting cost estimates. In any event, Verizon states that Mr. Boyles is agonizing over an immaterial issue.

Commission Conclusion

The record indicates that the approach followed by Verizon in its cost study filing is correct since it allows the call completion ratio to be varied by the user without having to rerun SCIS-IN. Further, the Commission agrees with Verizon that the impact on the estimated costs is not material since only three inputs to ICM are affected, and since the decrease in the unit investments is less than five hundredths of 1% in each instance.

K. ICM's Use of Average Switch Discounts

AT&T states that ICMs use of average switch discounts rather than site specific discounts inflates the cost estimates generated by the model. Verizon notes that it originally calculated an average switch discount for each technology versus a discount that varied by line size and by technology. On surrebuttal, Verizon witness Tucek accepted AT&T witness Boyles' criticism on this issue and, accordingly, modified the switching inputs for both the switched access and UNE costs to reflect the application of the switch discount by line size and technology.

XI.
Non-Recurring Costs

A. Overview Of Verizon's NRC Study

Verizon presented a TELRIC study of the non-recurring costs ("NRCs") caused by CLECs when they order wholesale UNEs, resale and access services from Verizon. Only the NRC study relating to access services is at issue in Phase I of this proceeding.

A CLEC that orders access services pays for the cost of the access services through a monthly recurring charge ("MRC"), which is determined by ICM. This MRC, however, does not reflect the costs associated with processing and provisioning the CLEC request. The NRC Access Cost Study captures such costs separately. While this phase of the proceeding is limited to the application of ICM to switched access, the NRC study complements ICM and together these studies provide an accurate and reasonable estimation of Verizon's forward looking costs associated with the provision of access services.

Phase I will review a cost model submitted by Verizon in conjunction with its original filing and the application of that cost model to access charges.

Verizon's Switched Access NRC study is consistent with TELRIC standards. As Verizon witness Richter testified, Verizon's cost NRC methodology is:

- Forward-looking;
- Least-cost, based on planned systems and process enhancements and corresponding efficiencies;
- Long-run;
- Based on incremental costs; and
- Consistent with the principles of cost causation.

(Richter Dir., Verizon Ex. 7.0, p. 9). Additionally, as fully described in the testimony of Verizon witness Richter, the NRC study reflects enhancements that will affect systems and processes in a forward-looking environment.

Verizon's NRC Access Cost Study classifies two types of costs associated with the processing of wholesale service orders. First are the costs that Verizon incurs when a CLEC places an order for an access service or an activity. Second are the costs associated with the provisioning and installation of the order or activity (*e.g.*, technician costs) .

With respect to the ordering costs, the NRC cost study outlines three types of costs associated with facilitating the ordering and connection of services for CLECs. The first type of cost is the variable costs (principally, labor costs) that arise when workers review, process, and provision CLEC orders. These costs were developed by studying each activity needed to fulfill a particular CLEC request. These activities include:

- Accessing the order;
- Reviewing the order;
- Listing all MRCs and NRCs applicable to the order; and
- Completing the Order.

(Richter Dir., Verizon Ex. 7.0, p. 6).

As such, the NRC cost studies are based on a sampling of observations of actual customer service representative activities for each type of UNE. Utilizing these studies and the actual loaded labor rates in effect for the National Open Market Center ("NOMCs") that handles Illinois orders, the NRC cost study developed costs incurred in fulfilling and provisioning CLEC orders.

The second type of ordering cost is the shared/fixed costs for facilities devoted to fulfilling CLEC requests at the Verizon NOMC that handles Illinois wholesale orders. These

include the cost of computers used by customer service representatives and the cost of land and buildings associated with the NOMCs.

The third type of ordering cost relates to Operations Support Systems ("OSS") costs. These include the cost of converting the OSS systems so that Verizon's back-office operations are accessible to CLECs. Additionally, these costs include transaction-specific costs each time a CLEC places an order.

Next is the provisioning costs that were developed by documenting the process flows of orders through various work groups in centers that make the central office equipment and outside plant facility assignments for Illinois orders. These process flows include various work groups depending on the complexity of the request. The costing of these processes has been adjusted to reflect any known and measurable expected change in the processes or the systems that support the work groups involved in the provisioning of Carrier Access orders. The average work time to perform the required activities in the various work groups is then multiplied by the appropriate loaded labor rate for that work group.

The field work costs were developed by documenting the installation process flows for the central office and outside plant activities. Verizon cost personnel used time and motion studies, system reports, order volumes, workgroup hours and Subject Matter Expert ("SME") estimates to establish the hours expended for each activity required to install each type of order. The activity times were multiplied by the loaded labor rate for the central office and field installation personnel to develop the costs.

B. NRC Loaded Labor Rate

1. Verizon

Verizon states that its NRC cost study is consistent with the Commission's Cost of Service Rules. Verizon notes that Part 791 identifies the costs that shall be included when developing labor rates. Section 791.70 (c) clearly states hourly labor rates

> …shall include the operational wages, benefits, paid absence, tools, and miscellaneous expenses.

83 Ill. Adm. Code § 791.70(c).

Verizon states that its labor rates are consistent with this rule. Verizon states that the labor rate calculated by Verizon includes all labor costs directly associated with the specific job title. Verizon asserts that consistent with Part 791.70(c), the labor rate Operational labor costs include all labor relating to the specific operation of the department or operational unit. Verizon states that the craftsman, first line supervisor, second line supervisor, and associated support are operational costs that contribute directly to the tasks of the operation, and are associated with the specific job title of the craftsman. Verizon witness Richter provided the following descriptions of these support items:

> The first line supervisor directly supervises and provides daily support for the technician (craftsman). Their responsibilities include the daily operations of the technician including job related functions, training, and job assistance, and they are the technicians first point of contact with the management of the company. First line supervisor support includes the technical as well as the administrative portion of the operation. Technical support from expert technicians is provided when the field technician encounters a problem and needs assistance. The expert technician also has responsibilities for software updates and the loading of software in major communications equipment. The administrative function includes time keeping, absence control, and various other types of administrative support for the operational group.
>
> Second line management is a title used to identify the second line supervisor of a specific operation. Second line support have

> specific responsibilities for the second line supervisors, first line supervisors, and support personnel in the operation.
>
> Employee benefits are those costs that are usually provided by a company to its workers and examples are pensions, medical and certain payroll taxes.
>
> Paid absence is when an employee is absent from his productive work, but is being paid, and an example is jury duty.
>
> Tools. Each technician requires tools to perform his or her work. The job title and function of the technician determines the type and quantity of tools needed to perform his/her task. Only tools required to perform the specific job function are included in the tool cost.
>
> Miscellaneous expenses are those minor expenses directly related to the operation of the departmental unit.

(Richter Reb., Verizon Ex. 8.0, p. 5).

Additionally, Verizon asserts that the NRC study labor rates were prepared using economic assumptions consistent with the Local Competition Order. *First Report and Order*, CC Docket No. 96-98 and CC Docket No. 95-185 (August 8, 1996) ("*First Report and Order*"). Verizon states that consistent with the FCC's TELRIC pricing methodology, Verizon's labor rates capture all of the costs that are directly attributable to the labor activity related to the provisioning of carrier access orders. As such, Verizon asserts that the employee's wages, benefits, overtime, tools, supervision, paid absence, support, and motor vehicle are all directly attributable to the provision of Carrier Access Orders. Verizon states that this methodology is consistent with the FCC's view that TELRIC pricing also includes "the cost of payroll and other back office operations relating to the line technicians, in addition to other attributable costs." *First Report and Order*, ¶ 682. Verizon notes that specific language in the *First Report and Order* makes it clear that shared costs should be directly attributed to the "greatest extent possible":

> Directly attributable forward-looking costs include the incremental costs of facilities and operations that are dedicated to the element. Such costs typically include the investment costs and expenses related to primary plant used to provide that element. *Directly attributable forward-looking costs also include the incremental costs of shared facilities and operations. Those costs shall be attributed to specific elements to the greatest extent possible*. For example, the costs of conduits shared by both transport and local loops, and the costs of central office facilities shared by both local switching and tandem switching, shall be attributed to specific elements in reasonable proportions. More broadly, certain shared costs that have conventionally been treated as common costs (or overheads) shall be attributed directly to the individual elements to the greatest extent possible. *The forward-looking costs directly attributable to local loops, for example, shall include not only the cost of the installed copper wire and telephone poles but also the cost of payroll and other back office operations relating to the line technicians, in addition to other attributable costs*.

First Report and Order, ¶ 682 (*emphasis* added). Verizon states that the *First Report and Order* is clear and unambiguous. Verizon notes that the FCC believes that shared costs should be attributed directly to the individual elements to the greatest extent possible. *Id.* According to Verizon, this approach is logical because there are many costs that, while directly attributable to a specific cost element, also span more than one service.

Verizon asserts that Staff and IRCA improperly rely on the Commission's decision in Docket Nos. 00-0511/00-0512 cons. to support their positions. Order, Docket Nos. 00-0511/00-0512 cons., May 15, 2001[11]; Order on Reh., Docket Nos. 00-0511/00-0512 cons., Nov. 29, 2001. Verizon states that this reliance is misplaced for several reasons.

First, Verizon states that the record in this proceeding is entirely different than the record in Docket Nos. 99-0511/99-0512. Verizon notes that the cost study contained in that docket is different than the NRC cost study presented in the instant case. Verizon states that, as such, comparisons between the dockets is not proper.

[11] The Commission subsequently granted Verizon's Petition for Rehearing on this issue. In a 3-1 vote (one abstain

Second, Verizon states that both Staff and IRCA mischaracterize the Commission's Order in Docket Nos. 00-0511/00-0512 cons. Verizon states that they cite the Commission's Order as if it categorically denied the use of loaded labor rates. Verizon states that a review of the Commission's plain language in both the original Order and the Order on Rehearing reveals that the Commission endorsed the use of loaded labor rates. Verizon notes that the Commission clearly stated that Verizon's loaded labor rates were designed in conformance with the FCC's *First Report and Order* mandate. Order on Reh., Docket Nos. 00-0511/00-0512 cons., Nov. 29, 2001, p. 20. Verizon further notes that the Commission went as far as to quote the *First Report and Order* endorsement of labor loadings that include "the cost of payroll and other back office operations relating to the line technicians, in addition to other attributable costs." *Id*.

Verizon further asserts that while the Commission approved of the concept of loaded labor rates and the fact that they were consistent with the *First Report and Order*, the Commission's Order was based on a finding that Verizon failed to " demonstrate in sufficient detail the nature and magnitude of the following forward-looking costs which it seeks to recover: direct support and direct supervision, indirect supervision and support functions, tools, motor vehicles, dispatch and direct departmental expenses (collectively "functions")." Order on Reh., Docket Nos. 00-0511/00-0512 cons., Nov. 29, 2001, p. 21. Verizon states that while it strongly disagreed with the Commission's decision, it is clear that the decision was based on the record in that proceeding—not a finding that loaded labor rates are *per se* improper. *Id*. Verizon states that the attempts of Staff and IRCA to characterize the Commission's Order in this fashion should be rejected. Verizon contends that Verizon's prima facie showing on this issue was not rebutted and the Commission should approve Verizon's NRC labor rates.

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and one dissent), the Commission affirmed the original Order.

Third, Verizon states that even if Staff and IRCA had properly characterized the Commission's prior decision, which they did not, it is well established law in Illinois that the Commission is not bound by its former decisions. *See Citizens Utility Board v. ICC*, 153 Ill.App. 3d 28, 32, 504 N.E. 2d 1367, 1370 (3rd Dist. 1987); *City of Chicago v. ICC*, 133 Ill.App. 3d 435, 440-41, 78 N.E. 2d 1369 (1985).

2. Staff and IRCA

Both IRCA witness Hendricks and Staff witness Hanson took issue with the labor rate produced by the NRC study. In their Initial Brief, Staff states that it reserves its position on this issue until Phase II of this proceeding since the Commission has already ruled that the issue of calculating loaded labor rates must be addressed in Phase II of this proceeding. *See Order on Rehearing* at 8, Verizon North Incorporated and Verizon South Incorporated: Proposed establishment of collocation tariffs, ICC Docket Nos. 00-0511/0512 (November 29, 2001) (hereafter "Verizon Collocation Order on Rehearing"). Staff believes the best course of action would be to address and finally resolve the issue in that phase of this proceeding. Staff suggests, however, that Verizon recalculate its labor rates based on removing the cost components consistent with the *Verizon Collocation Order*, and *Verizon Collocation Order on Rehearing*.

IRCA states that the Commission should reach the same conclusion on loaded labor rates that it reached in Dockets Nos. 00-0511/0512. IRCA states that Verizon should be ordered to remove from its loaded labor rates direct support, direct supervision, indirect supervision and support functions, tools, motor vehicles, dispatch, and direct departmental expenses. IRCA state that consistent with the Commission's previous decision, Verizon's loaded labor rates should only include direct basic overtime premium, paid absence, and benefits. Order in Dockets Nos. 00-0511/0512 at 20-21.

3. Commission Conclusion

The Commission is of the opinion that Verizon's NRC cost study is reasonable and consistent with the Commission's Cost of Service Rules. The record indicates that the labor rate calculated by Verizon includes all labor costs directly associated with the specific job title. Consistent with Part 791.70(c), the labor rate Operational labor costs include all labor relating to the specific operation of the department or operational unit.

Additionally, the NRC study labor rates are consistent with the economic assumptions set forth in the *First Report and Order*. Consistent with the FCC's TELRIC pricing methodology, Verizon's labor rates capture all of the costs that are directly attributable to the labor activity related to the provisioning of carrier access orders. As such, the employee's wages, benefits, overtime, tools, supervision, paid absence, support, and motor vehicle are all directly attributable to the provision of Carrier Access Orders. This methodology is consistent with the FCC's view that TELRIC pricing also includes "the cost of payroll and other back office operations relating to the line technicians, in addition to other attributable costs." *First Report Order*, ¶ 682. The specific language in the *First Report and Order* makes it clear that shared costs should be directly attributed to the "greatest extent possible."

Furthermore, Staff and IRCA improperly rely on the Commission's decision in Docket Nos. 00-0511/00-0512 cons. to support their positions. Verizon is correct that the record in this proceeding is entirely different than the record in Docket Nos. 99-0511/99-0512. Additionally, the cost study contained in that docket is different than the NRC cost study presented in the instant case. Comparisons between the dockets is not proper.

Finally, Staff and IRCA mischaracterize the Commission's Order in Docket Nos. 00-0511/00-0512 cons. The Commission's Order did not categorically deny the use of loaded labor rates. To the contrary, the plain language in both the original Order and the Order

on Rehearing reveals that the Commission endorsed the use of loaded labor rates. The Commission clearly stated that Verizon's loaded labor rates were designed in conformance with the FCC's *First Report and Order* mandate. The Commission went as far as to quote the *First Report and Order* endorsement of labor loadings that include "the cost of payroll and other back office operations relating to the line technicians, in addition to other attributable costs." *Id*.

C. The Common Cost Recovery Factor Used To Recover Common Costs Will Need To Be Recalculated Once All Adjustments To ICM Are Determined

ICM's expense inputs include a common cost recovery factor or common cost allocator. No party opposed this factor. Verizon notes that the development of the common cost allocator, its application, and the adjustment for the calibration shortfall are issues that are separate from ICM.

Verizon further notes, as acknowledged by Staff witness Marshall, that the fixed allocator used to recover common costs will need to be recalculated once all adjustments to ICM are determined. Verizon states that such a recalculation is necessary with respect to any adjustments that would affect the direct costs, whether it be through the level of modeled investment or through the amount of operating expenses. Similarly, Verizon notes that reclassification of costs from those included in the denominator of the allocator to those included in the numerator would also require a recalculation. In general, this would cause more of the costs in question are assigned to the loop and less to the switch.

Additionally, Verizon notes that the allocator needs to be recalculated to correct a "calibration shortfall" inherent in the model. (Tucek Sur., Verizon Ex. 3.0, p. 43). This "calibration adjustment" is discussed previously in this Interim Order.

Verizon states that selection of the "Shared Costs Included" option is the best way to model these expenses. However, Verizon asserts that it is willing to concur with Staff's

recommendation on this issue, provided the fixed-allocator for common costs is modified accordingly.

Commission Conclusion

While an input issue, the Commission agrees that the fixed allocator used to recover common costs will need to be recalculated once all adjustments to ICM are determined. Additionally, the Commission is of the opinion that Verizon's proposed "calibration adjustment" is reasonable.

Further, while also an input issue, the selection of the "Shared Costs Included" option is reasonable.

D. Compliance With Orders In Docket Nos. 97-601, 97-602, And 97-0516 (consol.)

In Docket Nos. 97-0601, 97-0602, and 97-0516 (consol.), the Commission entered an Order on Reopening requiring, among other things, that Verizon file updated LRSIC studies for intrastate switched access rates. (*June 21 Order*). Verizon is not required to, and, is not proposing new rates as a result of the Commission's Order. However, Verizon has filed new switched access cost studies in order to comply with the Commission's Order.

The Commission is of the opinion that Verizon has met the requirements of these orders.

XII.
Approval of ICM

The record does not contain any credible evidence attacking the model itself. Most of the issues raised in Phase I relate to inputs to ICM—not ICM itself. As such, ICM can be modified to address each of the major issues raised by the parties. As such, the Commission approves ICM in Phase I of this proceeding.

XIII.
Findings And Ordering Paragraphs

The Commission, having reviewed the record developed so far and being fully advised of the premises, is of the opinion and finds that—

(1) Verizon North Inc. and Verizon South Inc. are telecommunications carriers as defined by the Illinois Public Utilities Act;

(2) the Commission has jurisdiction over the parties and the subject matter of this proceeding pursuant to the Illinois Public Utilities Act;

(3) on December 21, 2000 Verizon filed the instant Petition seeking approval of cost studies for Unbundled Network Elements avoided costs and intrastate access services; and

(4) the recitals of fact and conclusions of law reached in the prefatory portion of this Interim Order are supported by the evidence in the record and the law and are hereby adopted as findings of fact and law.

IT IS THEREFORE ORDERED by the Illinois Commerce Commission that Verizon's Integrated Cost Model is reasonable.

IT IS FURTHER ORDERED that any materials submitted in this proceeding for which proprietary treatment was requested shall be accorded proprietary treatment.

IT IS FURTHER ORDERED that any petitions, objections or motions made in this proceeding and not otherwise specifically disposed of herein are hereby disposed of in a manner consistent with the conclusions contained herein.

IT IS FURTHER ORDERED that subject to the provisions of Section 10-113 of the Public Utilities Act and 83 Ill. Adm. Code 200.880, this Order is not final; it is not subject to the Administrative Review Law.